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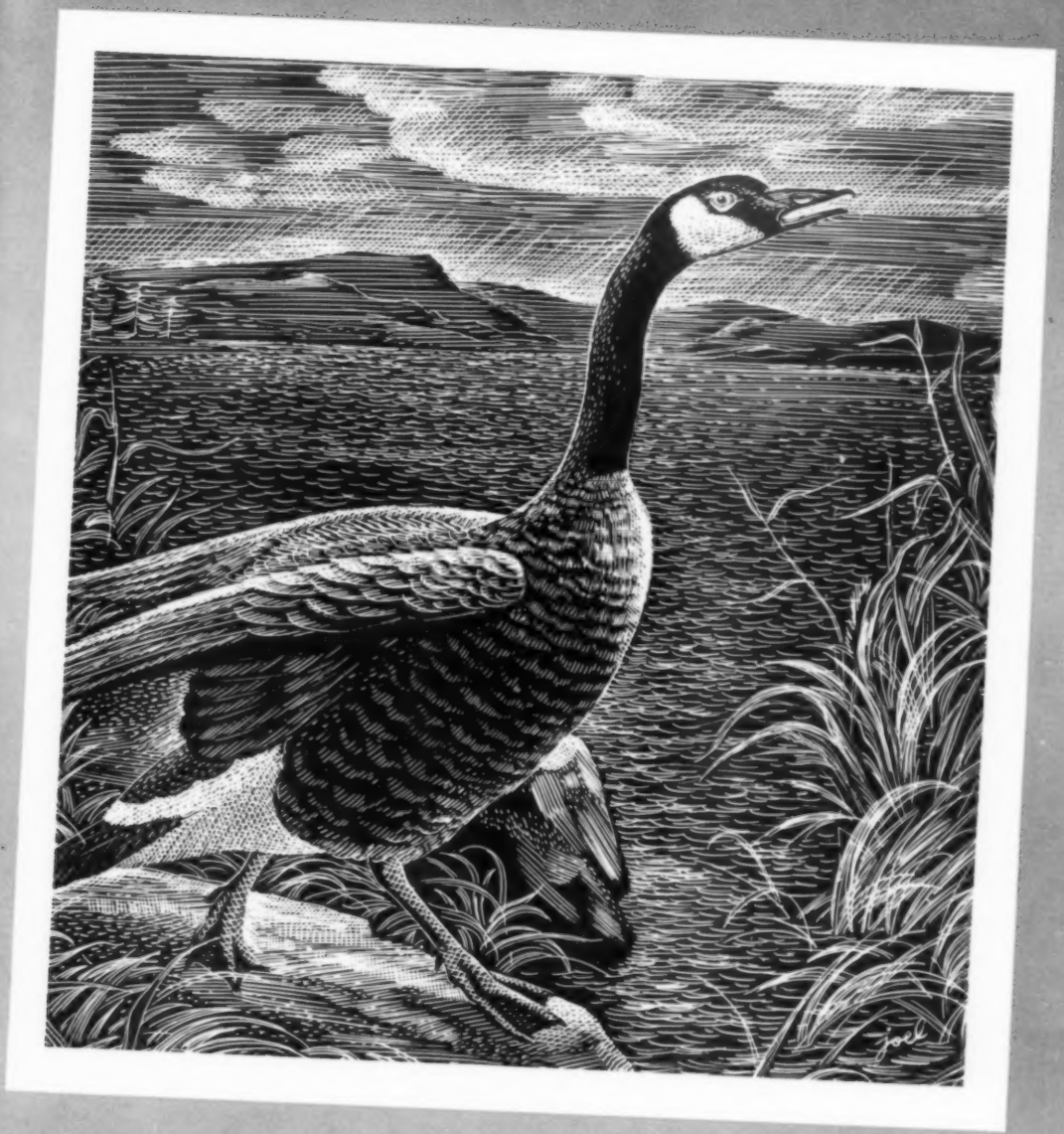

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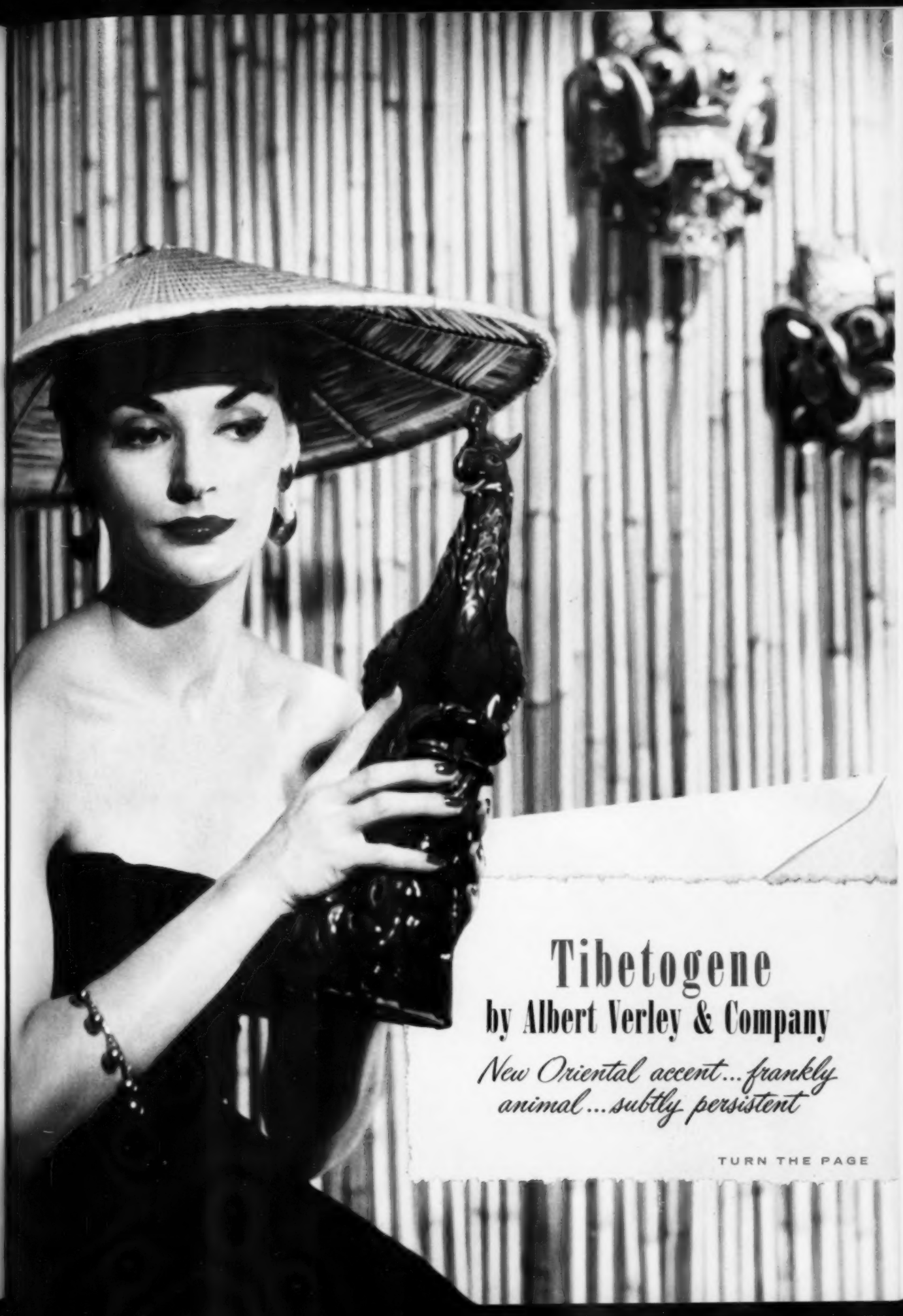
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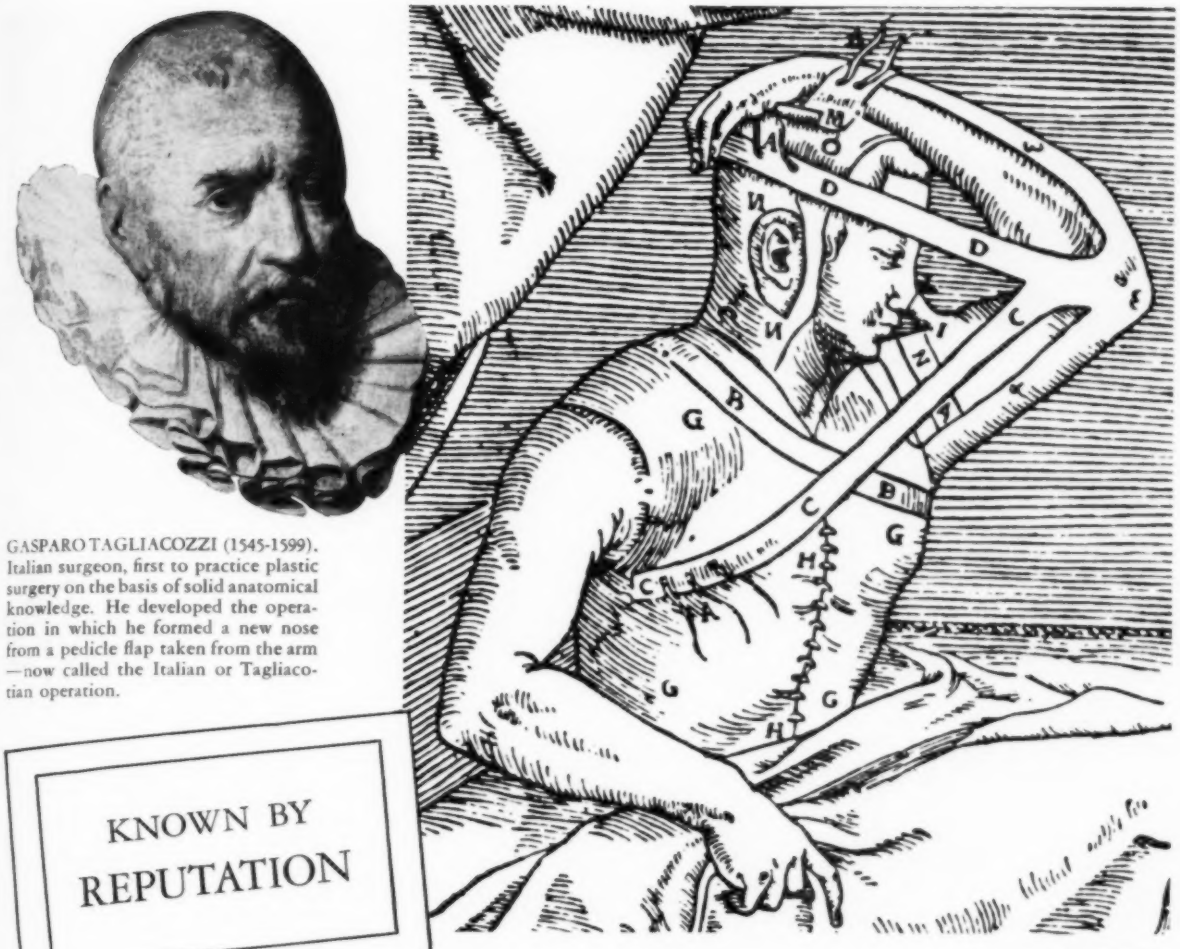

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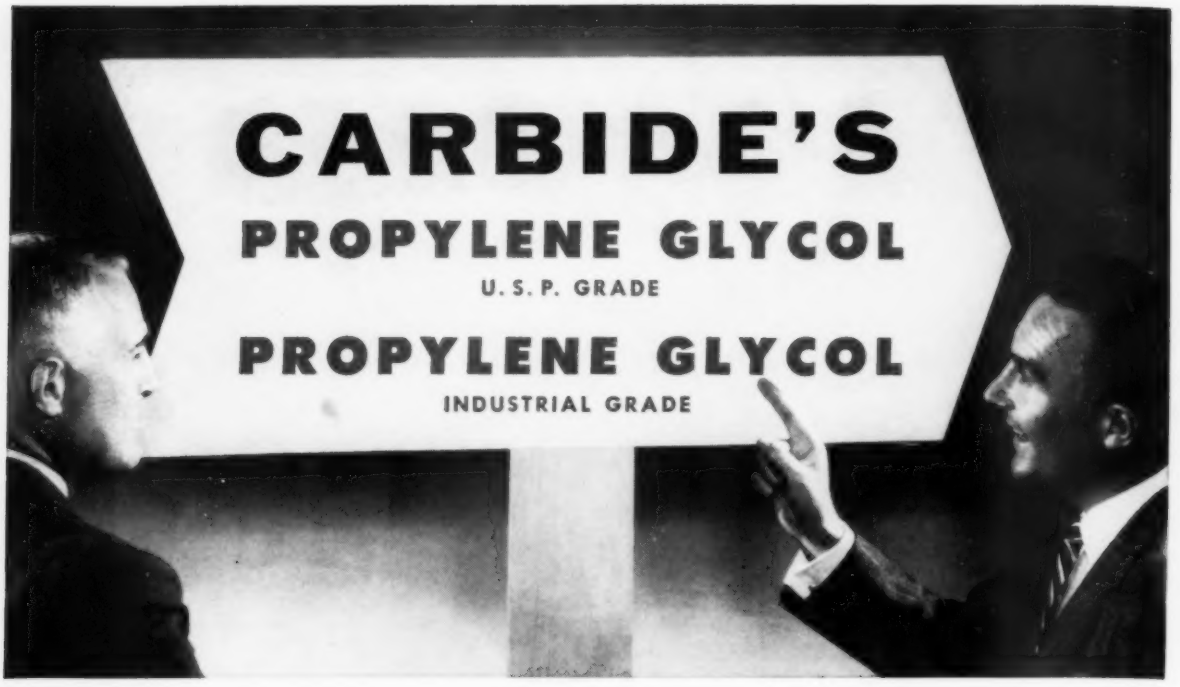

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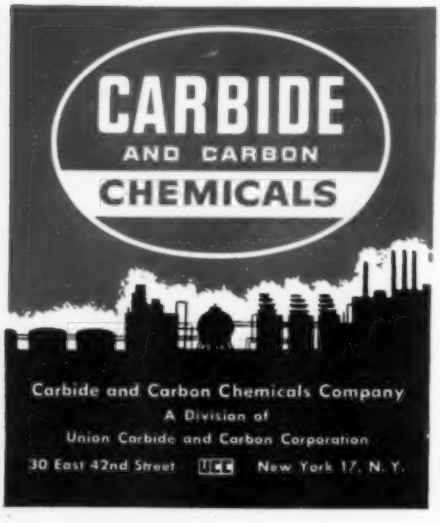

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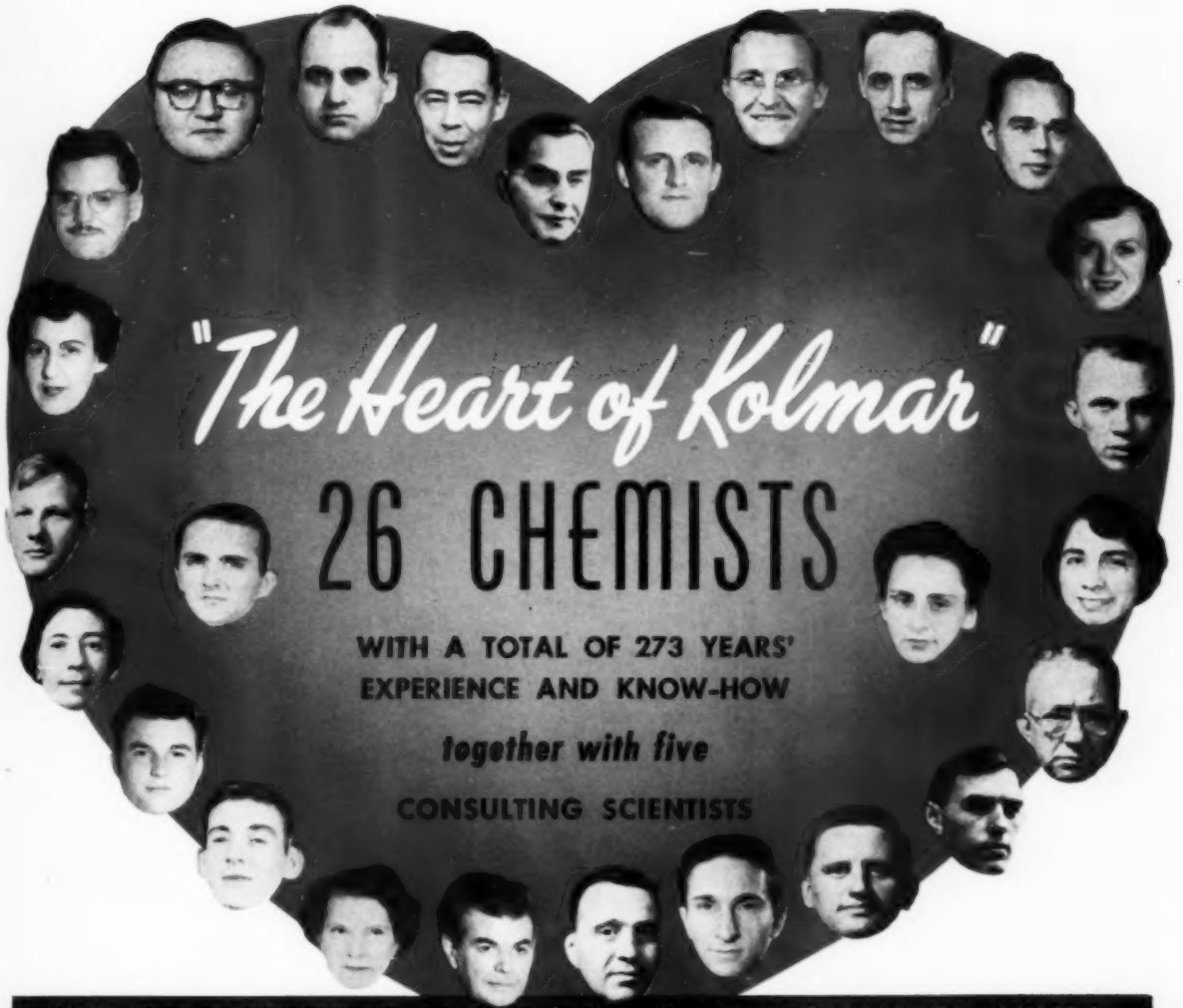
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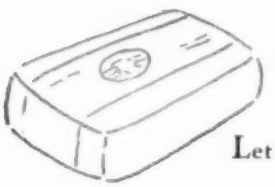

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Acid Value	197 — 202	197 — 202
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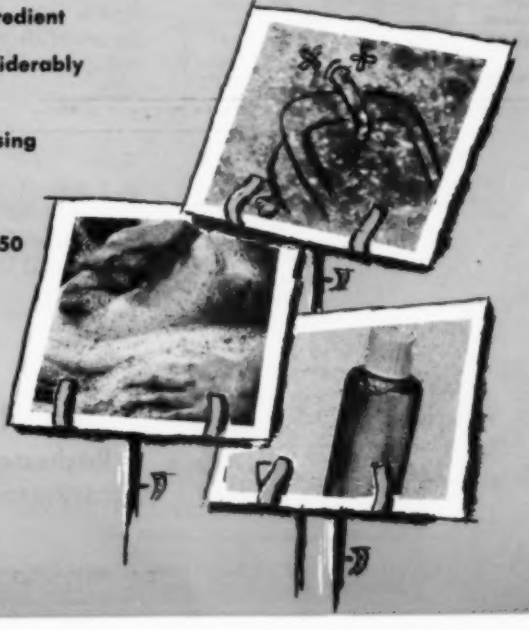
MAPROFIX TLS-50 is completely miscible in cold water, will not crystallize.

These are only the major advantages of MAPROFIX TLS-50 – get to know all of them with samples and complete data, available upon request.



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West Coast Representative: E. S. Browning Co., San Francisco, Los Angeles

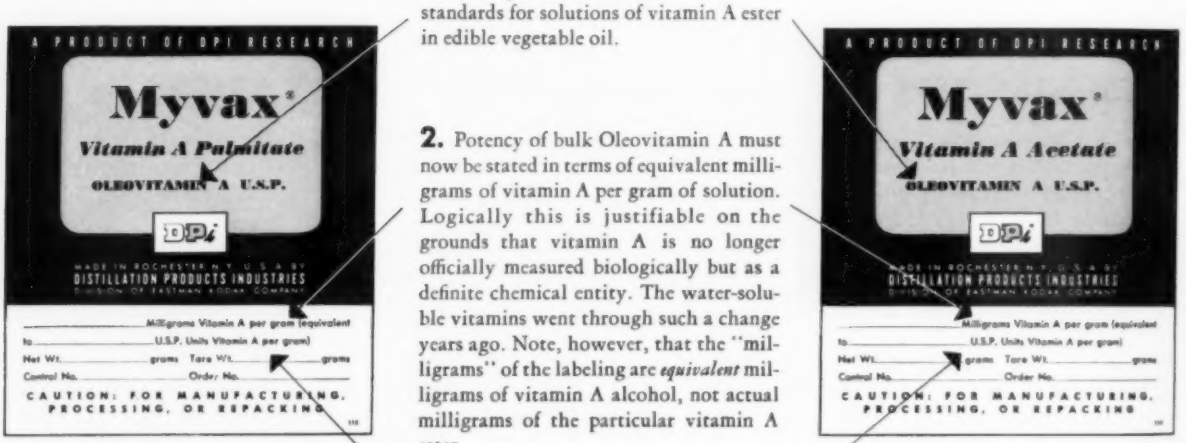
Myvax® and U. S. P. XV

The fifteenth revision of the U. S. Pharmacopoeia was issued July 1, 1955, to become official December 15, 1955.

A monograph has been set up for bulk vitamin A products. To meet it, our products needed a change only in the labels.

Only two minor changes are made in assay procedure: 1) the Carr-Price blue-color test is used solely for identification without specifying a ratio of the potency so measurable to the official spectrophotometric potency; 2) the ether extract for spectrophotometric assay is no longer to be boiled down and dried with sodium sulfate.

To conform to the new revision, the labels on Myvax Vitamin A Palmitate and Myvax Vitamin A Acetate will look like this:


A PRODUCT OF DPI RESEARCH
Myvax®
Vitamin A Palmitate
OLEOVITAMIN A U.S.P.
DPi
MADE IN ROCHESTER N.Y. U.S.A. BY
DISTILLATION PRODUCTS INDUSTRIES
DIVISION OF EASTMAN KODAK COMPANY
Milligrams Vitamin A per gram (equivalent
to U.S.P. Units Vitamin A per gram)
Net Wt. grams Tare Wt. grams
Control No. Order No.
CAUTION: FOR MANUFACTURING, PROCESSING, OR REPACKING
A PRODUCT OF DPI RESEARCH
Myvax®
Vitamin A Acetate
OLEOVITAMIN A U.S.P.
DPi
MADE IN ROCHESTER N.Y. U.S.A. BY
DISTILLATION PRODUCTS INDUSTRIES
DIVISION OF EASTMAN KODAK COMPANY
Milligrams Vitamin A per gram (equivalent
to U.S.P. Units Vitamin A per gram)
Net Wt. grams Tare Wt. grams
Control No. Order No.
CAUTION: FOR MANUFACTURING, PROCESSING, OR REPACKING

1. The word "Oleovitamin A" indicates that the product meets all the U. S. P. standards for solutions of vitamin A ester in edible vegetable oil.

2. Potency of bulk Oleovitamin A must now be stated in terms of equivalent milligrams of vitamin A per gram of solution. Logically this is justifiable on the grounds that vitamin A is no longer officially measured biologically but as a definite chemical entity. The water-soluble vitamins went through such a change years ago. Note, however, that the "milligrams" of the labeling are *equivalent* milligrams of vitamin A alcohol, not actual milligrams of the particular vitamin A ester.

3. Labeling in terms of both milligrams and units helps in getting accustomed to the gravimetric designation. One milligram is 3,333 U. S. P. units.

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(DIVISION OF EASTMAN KODAK COMPANY)

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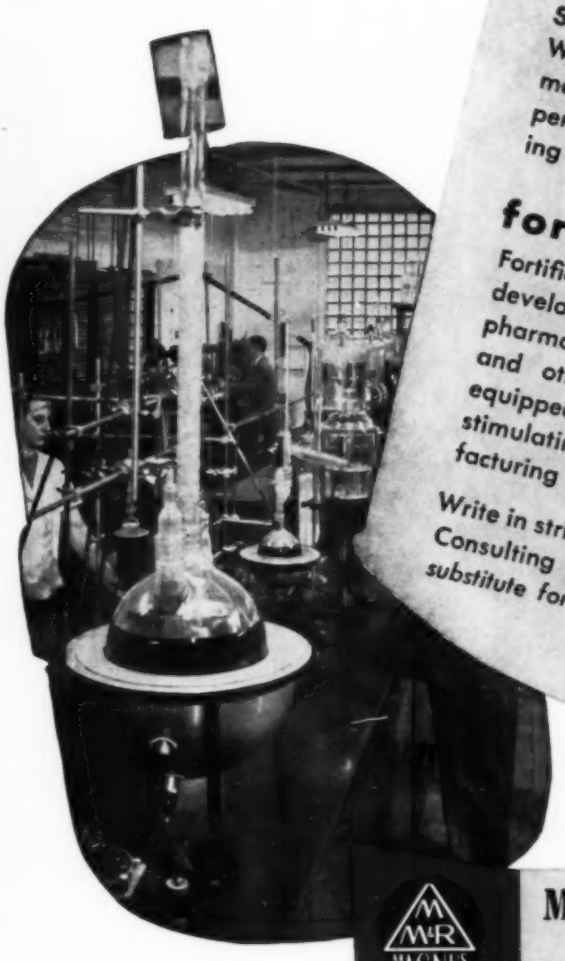

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√ ***outstanding odor and color resistance!***

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Give your cosmetic product the stability, the superior shelf life, the greater customer satisfaction—which CARNATION White Oil can help assure.

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Cosmetics • Shampoos

PRODUCT	TYPE	USES	ADVANTAGES
Stepanol WA (Paste)	Sodium lauryl sulfate	Liquid or paste creme shampoos. Emulsifier for use in cosmetics.	Outstanding foam and foam stability. Light stable color • bland odor. Superior detergency and wetting.
Stepanol WAQ (Heavy Liquid)	Sodium lauryl sulfate	Same as above, but for use where viscous liquid instead of paste is desired.	Same as above.
Stepanol WA Special (Low Viscosity Liquid)	Sodium lauryl sulfate	Liquid creme shampoos.	Same as above plus very low inorganic salt content.
Stepanol WAT (Clear Fluid Liquid)	Triethanolamine lauryl sulfate	Clear liquid shampoos. Foaming hand cleaners.	Low cloud point, outstanding color, foaming, detergency and wetting.
Stepanol WAT-S (Clear Fluid Liquid)	Triethanolamine salt of higher fatty alcohol sulfate	Clear liquid shampoos.	Same as above plus superior emulsification. Slightly darker and heavier than WAT.
Stepanol ME Dry (Dry White Powder)	High active sodium lauryl sulfate (U.S.P.)	Liquid and dry shampoos. Emulsifying agent for waxes and creams, dentifrices.	Excellent foaming, detergent and emulsifying properties. Soluble in water.
Stepanol AM (Heavy Liquid)	Ammonium lauryl sulfate	Liquid, creme or paste shampoos.	For use where low ph is required. Good detergency, wetting and foaming.
Stepanol MG (Light Amber Liquid)	Magnesium lauryl sulfate	Same as above.	Same as above, but gives better cloud point than sodium or ammonium salts.
T6-A (Light Amber Viscous Liquid)	Alkanolamide	Liquid bubble bath.	Excellent foam stabilizer in presence of soap.
T6-B (Light Amber Viscous Liquid)	Alkanolamide	Clear and creme shampoos.	Thickening agent. Auxiliary detergent, some emolliency.
LIPA (Light Ivory Color Flake)	Alkylolamide	Detergent hand cleaners. Creme shampoos.	100% active. Superb foam stabilizer. Auxiliary detergent. Nonionic in character.

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meets the most stringent demands
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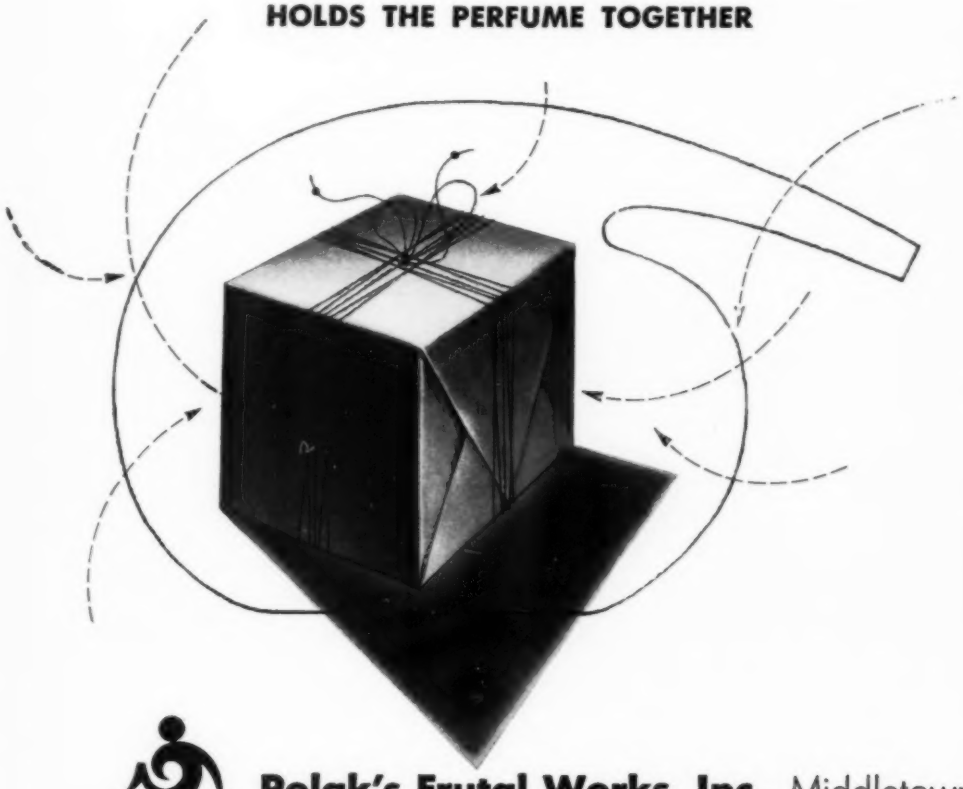

Polak's Frutal Works, Inc., Middletown, New York

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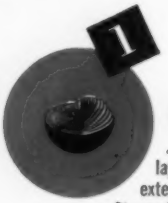
6 STRONG COBB FIRSTS IN PHARMACEUTICAL MANUFACTURING

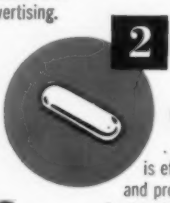
In the years in which Strong Cobb has manufactured for the trade, our research and production heads have time and again come up with new scientific methods and ideas, the results of which have always been placed FIRST before our customers.

Within the last few years, six manufacturing achievements have been created by Strong Cobb — either FIRST in the drug business or FIRST in the private formula field. Here they are for your inspection.



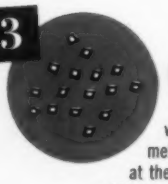
1 CELETS

... the sealed-coat type, layered tablet previously extensively covered in Strong Cobb advertising.



2 CAPTABS

... this capsule-shaped tablet is efficient and economical and provides alternatives for broader product lines.

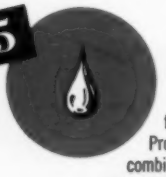


3 MULGRANS

... multi-vitamin granules which provide a convenient method for administration, at the same time minimizing objectionable taste features.

4 MULLAYS

... multiple-layered coated tablets for sustained or delayed action. In the case of incompatibilities, that principle provides protection and stability for a combination of ingredients which could not otherwise be blended.



5 STAMUL

... stable emulsion type base for liquid vitamin products. Provides a ready means for combining soluble and insoluble materials, the latter being held in suspension, and the base formulated to provide a good shelf life.

6 JELBASE

... jelly base for palatable cough preparations. Actually a pectin-type jelly which is extremely palatable and very effective in masking the usual bitter taste associated with materials used in cough preparations.

These Strong Cobb FIRSTS may interest you as a possible base for a new product. You are invited to write for further information or samples on them.

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STRIADS.....a NEW Strong Cobb tablet made in double or triple layers designed to combine incompatible ingredients in one tablet or provide sustained action through different disintegrating times. Available in plain or sugar-coated forms in various sizes and shapes.

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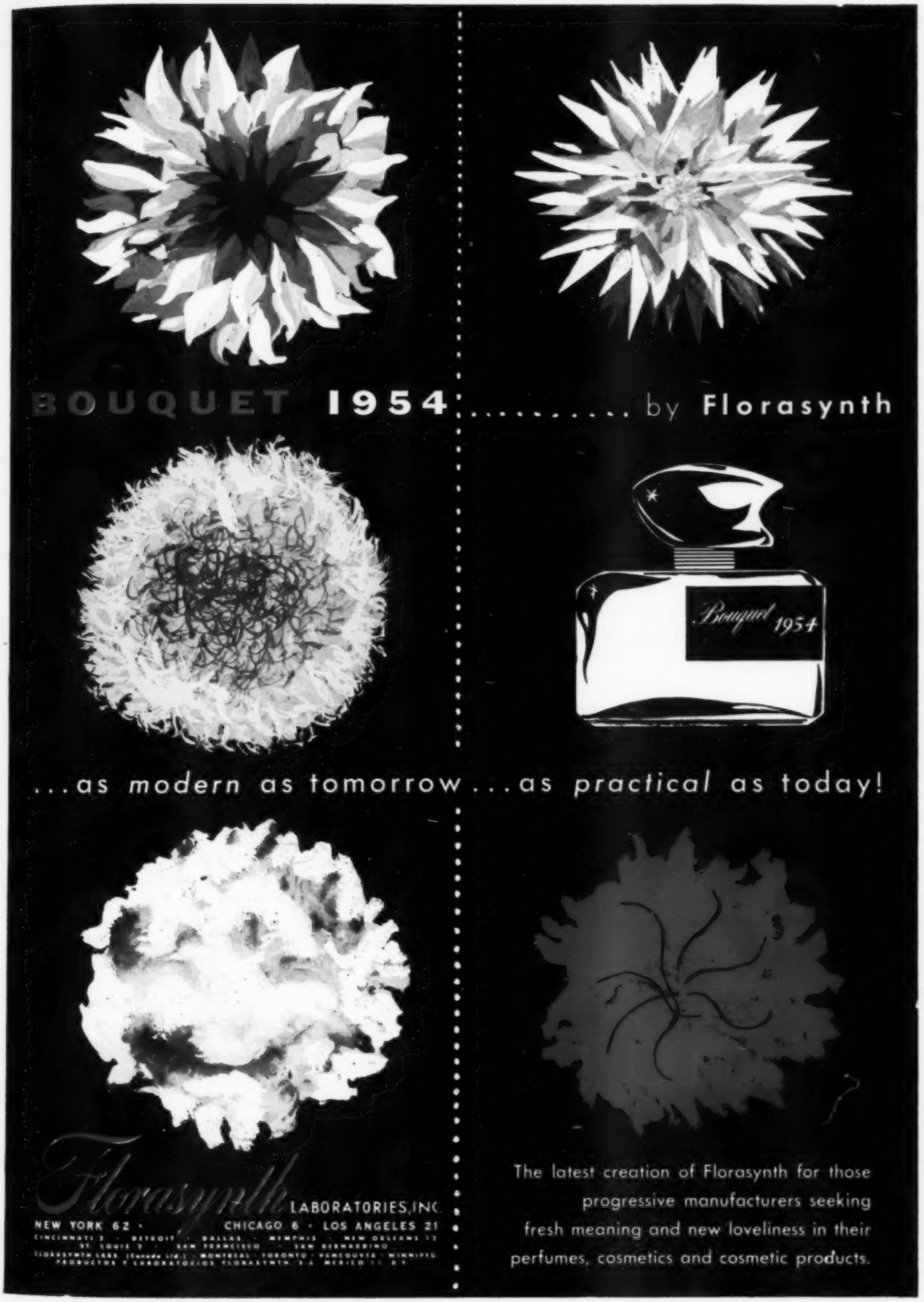
American Chlorophyll Division, Lake Worth, Florida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Tegin P.... Propylene Glycol Monostearate—Self Emulsifying. For greaseless creams—brushless shave, foundation, suntan: lotions—foundation, suntan, cosmetic stockings: ointments.

Tegin 515.. Glyceryl Monostearate—Non Self-Emulsifying. Used in conjunction with auxiliary emulsifiers.

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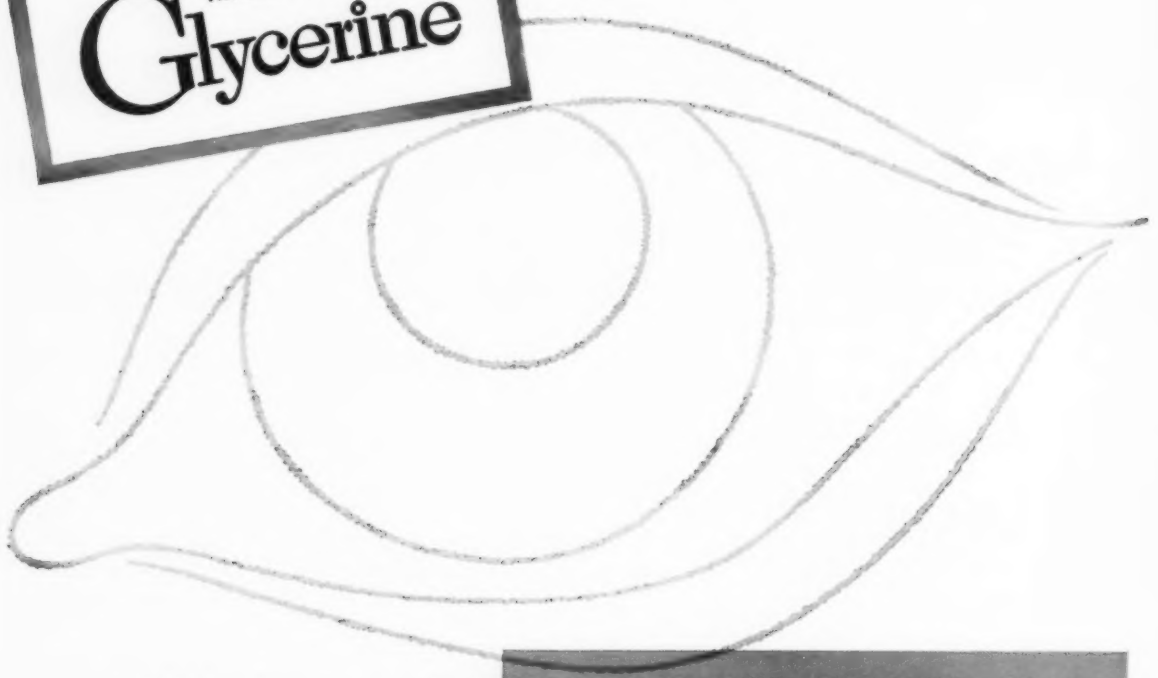

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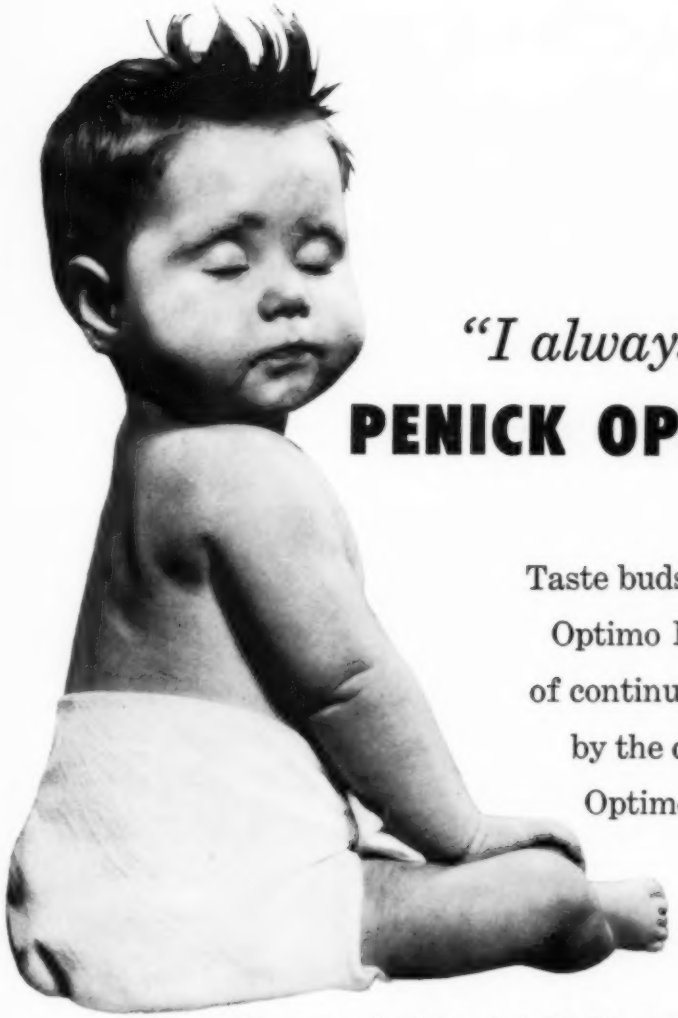

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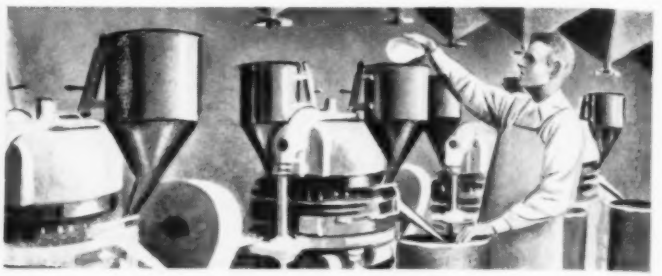

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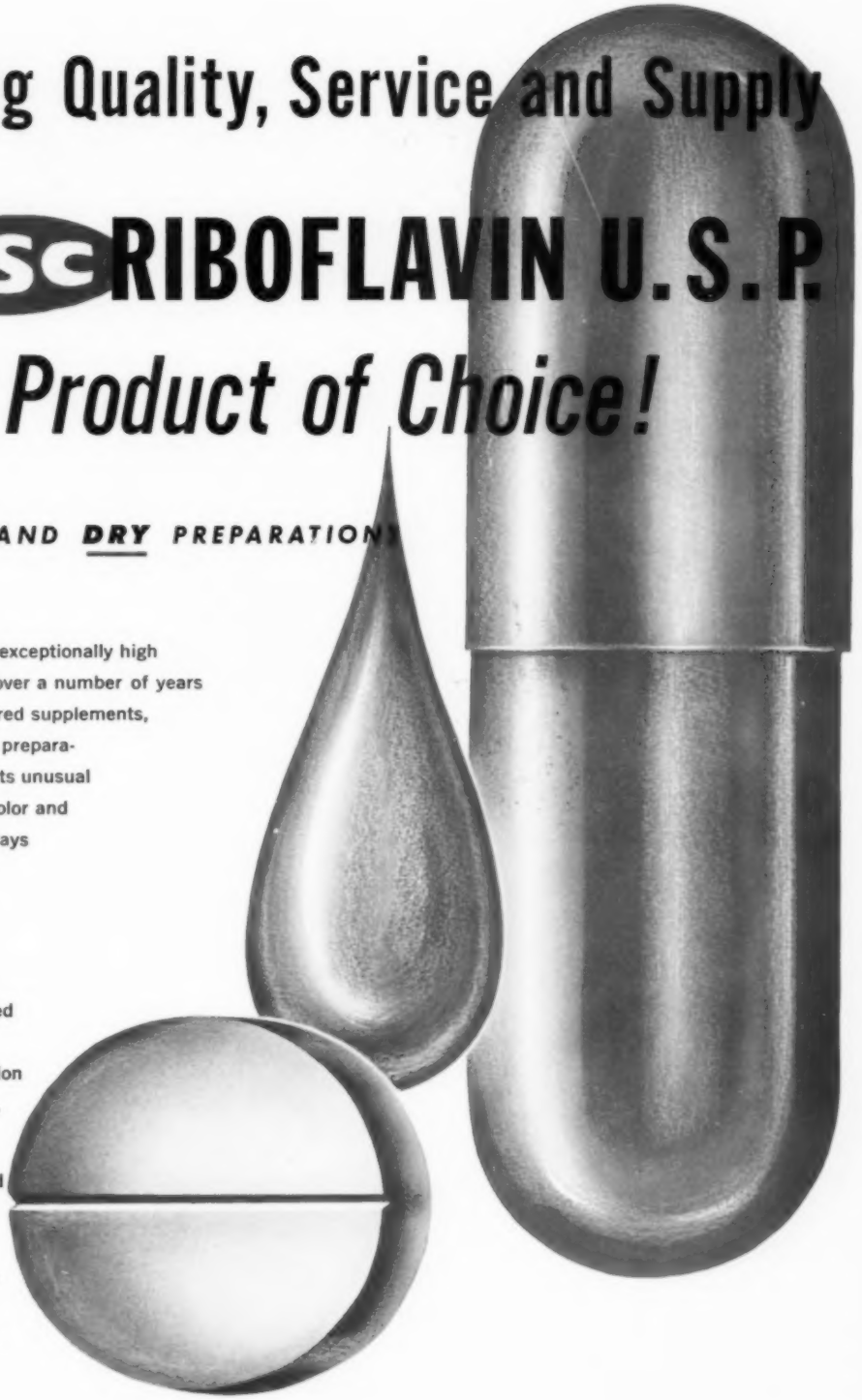

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"Since we are passing the dividend, let's send each stockholder a bottle of Burb Pills with a nice letter."

Keeping Posted

F.T.C. Allows Dual Functional Discounts

A surprising ruling by retiring Federal Trade Commission Chairman Edward H. Howrey, handed down early last month, broke away from the long standing FTC position that all customers at the same level of distribution must be accorded identical terms. Under this decision the Commission ruled that sellers can give functional discounts to integrated buyers—those who perform the functions of both wholesaler and retailer—without violating the price discrimination provisions of the Robinson-Patman Act. Also under the Howrey decision sellers can make price concessions on the basis of a showing that a particular integrated customer has taken over a specified portion of the distribution cost ordinarily assumed by the seller.

Commissioner Howrey's decision was supported by Commissioner John Gwynne, who has since become chairman of the Commission, and Commissioner Lowell B. Mason. Lined up against this majority of the three Republican commissioners, were the two Democratic commissioners, Robert T. Secrest and James Mead, both of whom sharply attacked the majority opinion. In separate opinions the dissenters said that the Howrey decision will make the price discrimination provisions of the Robinson-Patman Act unenforceable, and that the end result will be the "ultimate annihilation" of small retailers.

This decision was the by-product of a decision which dealt chiefly with the right of Doubleday & Company to enter into contracts requiring independent book stores to adhere to fair trade minimum prices on books which are being sold by Doubleday-licensed book clubs at lower prices.

In its appeal from the hearing examiner's decision, Doubleday sought to prove that the 46 per cent it gives three big jobbers can be justified because these companies perform distribution functions which are not performed by other smaller jobbers who have been receiving discounts of only 40 to 43 per cent. In his decision, Chairman Howrey said that Doubleday had not proved the "big three" actually performed extra functions and were entitled to extra concessions. However, he said that the FTC had examined all the evidence in the record and that it was his opinion that Doubleday was right in using this type of proof in an effort to justify extra discounts.

Commissioner Howrey pointed out that traditional relationships are constantly breaking down in this modern marketing world, and that there is constant turmoil, with the adoption of methods that defy definition, neat nomenclature or descriptive labels.

In dissenting from the majority opinion Commissioner Secrest said it is established law that the seller should not be compensated for a service which he renders for himself in selling goods. "A service where the benefits inure to the seller is one thing," he said. "It is quite another where the service helps the buyer, even though the service may help the seller by resulting in larger purchases from him. Enforcement of the law would be extremely difficult if not impossible if in each case the Commission were required to divide a common service which may benefit both buyer and seller. Each case would require an operation as delicate and difficult as the separation of the Siamese twins. "Functional classification of customers for discount purposes should be conditioned on their character as sellers, not on the performance of any services to the supplier. To hold otherwise would lead to pricing by individual customers, which would undoubtedly give the large buyer a price advantage in the resale of the seller's goods."

Commissioner Mead, whose term as commissioner expired September 30 and who was not reappointed to the Commission, said the decision paves the way for the ultimate annihilation of small retail dealers "who are unable, by reason of their inability to perform the same marketing functions as their larger dual-functioning competitors, to successfully compete with them."

Medicine and TV

The Fall season is here and the television program schedules to continue until next Summer are now in force. This means that the general public will be able to get information on health problems from the three outstanding medical programs which are again being presented on television. These are Medical Horizons, a weekly half hour program sponsored by Ciba Pharmaceutical Products, Medic, also a weekly program,

One of the most important tools of today's artisan perfumer is the "perfume specialty". Actually, the only source of new and original fragrance notes, "specialties" have increased the range of odorant materials at the disposition of the perfumer and presented him with natural odor values unobtainable by physical extraction. Below are outlined brief descriptions of several fine "specialties", developed over the past few years in the D&O Perfume Laboratories. Additional information and trial quantities will be provided to any interested perfumer upon request.

ROSE BULGARE SYNTHETIC...
Dramatic new rose note whose fresh and authentic qualities, definitely rose in character, permit its use in large proportions as an extender for the scarce and costly natural Rose Bulgare.

JASMALIA... created specifically for use in fine extracts. At very reasonable cost, this synthetic Jasmin specialty recreates with exceptional authority and power the characteristic qualities of this important perfume oil.

OEILLET BLANC... the beautiful new carnation specialty from the D&O Perfume Laboratories. A compelling composition, spicy and floral in character, OEILLET BLANC is designed to provide the bright Carnation note so frequently demanded by discriminating perfumers.

TUBERALYS... new version of a traditional favorite from the D&O Laboratories. The full character of the lovely Tubereuse, with its sweet yet vibrant softness, has been expressed in TUBERALYS... a perfume specialty with a grace and beauty as timeless as the carefully kept portrait of a Roman lady.

KASBA... superb new Oriental specialty in the popular Eastern tradition. A beautifully balanced composition, KASBA vividly portrays the color, mood and timeless mystery of the Orient, as fascinating today as during the fabulous reign of Saladin.

CONVALLARYS... lovely and versatile new specialty, particularly well suited for incorporation in aerosol products. Blends admirably with many compositions, imparting a subtle fresh lift and body, without dominating the compound. Shelf tested in the D&O Aerosol Testing Laboratories for glass aerosol colognes, CONVALLARYS has proved to be clearly soluble and its odor completely stable in the concentrate propellent system.

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but sponsored by a non-pharmaceutical company—The Dow Chemical Company, and the Smith, Kline & French Laboratories program, a one hour show which is presented monthly.

We sometimes wonder how far the trend in progams of this sort will go. While admittedly there is certain fascination in the dramatizing of serious health conditions, we also wonder if this fascination is not of the morbid variety associated with soap operas and half hour crime mysteries. If this is so, the medical programs should be sure-fire and should increase in number and popularity with a certain segment of the television viewers.

Treatment Through Nutrition

The science of nutrition is opening new avenues of treatment in such widely diverse conditions as irradiation effects, emotional stress, cancer, pregnancy, diseases of the aged, obesity, chemical poisoning, and chronic degenerative diseases, according to Dr. Robert S. Goodhart, Scientific Director of the National Vitamin Foundation.

In his annual report of the Foundation, which was founded in 1946 by producers and distributors of vitamins and related products to promote and support studies of nutrition in both health and disease particularly as they relate to vitamins, Dr. Goodhart said the appropriations for grants-in-aid research during 1954 amounted to $151,333.33, and for educational purposes $21,330.99, a total of $172,661.32. He said further:

"During the past nine years the Foundation has been a major contributor to the advancement of the science of nutrition. The total of the implemented and payable appropriations in the areas of research and education made by the Foundation since its incorporation amounts to $1,034,466.87. The science is young and, although remarkable progress has been made, a very great deal remains to be done.

"Results of Foundation supported projects that have proven to be of considerable practical importance include, among others, evidence that vitamin B_{12}, vitamin B_c, folic acid, and pantothenic acid are dietary essentials for man; considerable progress toward the elucidation of the symptomatology of deficiencies of these vitamins and of their places in the therapy of a variety of conditions in man and animals; proof of the importance of adequate nutrition with vitamins and proteins during pregnancy and of the pernicious effects of obesity or underweight on the course of pregnancy; major advances toward the understanding of the part played by intrinsic factor in vitamin B_{12} metabolism; understanding of the importance of the time element in the efficient utilization of amino acids; demonstration of the prevalence of chronic deficiencies of vitamin A, vitamin C, riboflavin, and niacin, and the response of such deficiencies to adequate vitamin therapy continued over a sufficient period of time. Work now in progress promises to demonstrate the importance of vitamin E in human nutrition."

Pointing out the importance of nutrition in the health and welfare of the aged person, Dr. Goodhart said, "Expansion of research on the relation of nutrition to the ageing process, on nutritional factors in the cause and prevention of chronic degenerative diseases, and on the importance of nutrition in the care and rehabilitation of aged persons is definitely indicated. Of equal, if not more importance, is the study of nutrition and nutritional requirements as they are affected by stress situations and the effect of the body's nutritional status upon its ability to respond satisfactorily to stress situations."

Dr. Goodhart said "stress situations" were of many types, such as growth, pregnancy, lactation, emotional strain, disease and injury, heat, cold, exercise, chemical poisoning, and irradiation.

"Study of the relation of specific nutrients and nutritional status to cancerous growths is of immense importance and research in this area is expanding rapidly," he said.

Wells on Chilson

F. V. Wells, editor of Soap, Perfumery & Cosmetics (London) writes in his September issue of his first meeting with Frank Chilson as follows:

"I had the pleasure of meeting the fabulous Dr. 'Frankie' Chilson—and at an appropriate time, the height of the Wimbledon tennis season. I went down, figuratively speaking, in three straight sets. . . . Consulting engineer, journalist, student of men and and affairs, his activities cover a very wide range, and his energy has to be seen (or should I say experienced) to be believed. At all events, I had to take a brace of Aspros the morning after our meeting—so, in a small way, I can lay claim to have been good for trade even if notably outclassed in the arts of conversation and entertainment. Frankie seems to know everybody worth knowing (and inevitably, I suppose, a few not worth knowing) in the American pharmaceutical and cosmetic industries. He looms larger, physically, than I had expected, and has the sort of genial, coruscating personality that one would associate with his writings in the U. S. Drug and Cosmetic Industry."

Medical Expedition in Africa

Lederle Laboratories Division, American Cyanamid Company, and Sikorsky Aircraft jointly sponsored a medical expedition through Africa, concentration area for some of the world's most serious diseases. Undertaking the first crossing of central Africa by helicopter, the expedition left Belgian Congo on August 25, and arrived at Nairrobi, Kenya late last month after way stops at some 30 Protestant and Roman Catholic Missions. On-the-spot medical surveys in Belgian Congo, Ruanda-Urundi, Kenya, and Tanganyika were carried out in cooperation with the Christian Missions in the area.

The seven-man team was led by Karl Jensen of Lederle Laboratories International Department who said that helicopter transportation was chosen to enable better coverage of the isolated missions not otherwise easily reached. Dr. F. C. Ottati, Director of Foreign Clinical Research for Lederle said the expedition had also gathered soil samples from isolated

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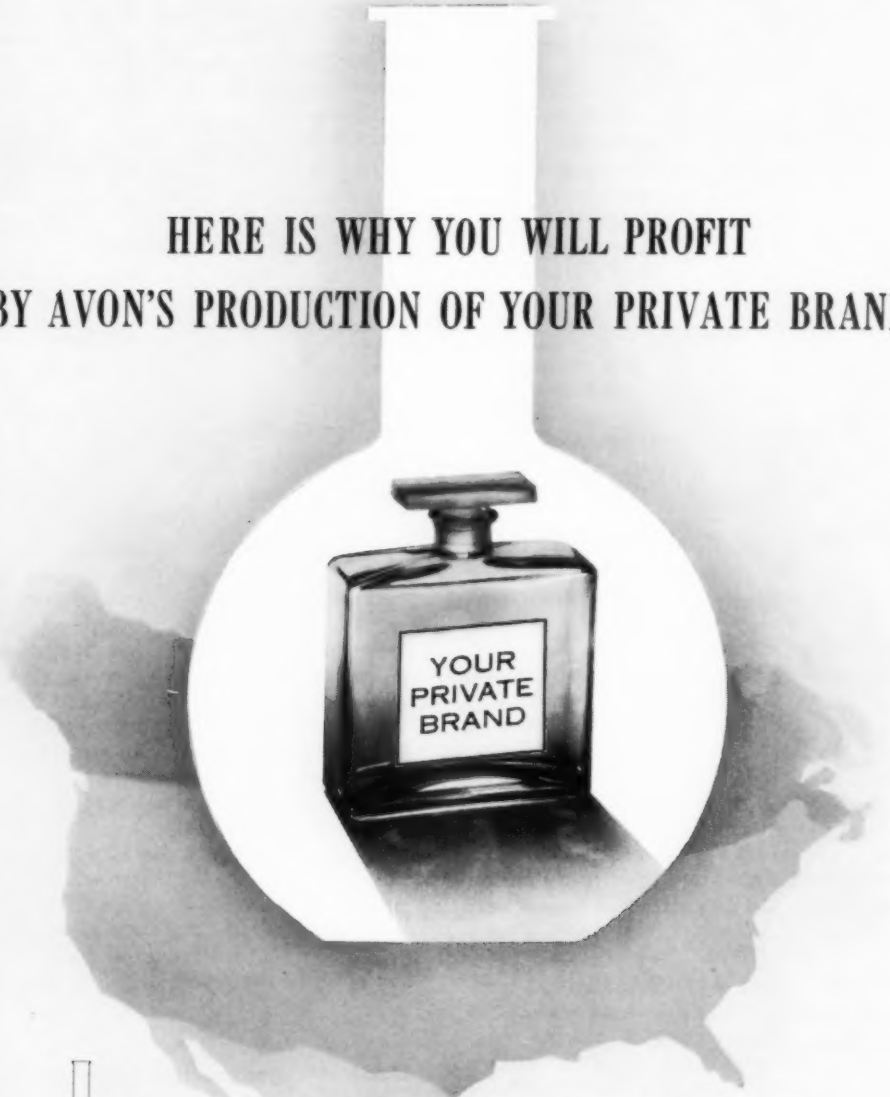

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QUALITY ASSURED Purest ingredients • skilled compounding • expert packaging • 69 years' experience are available to make your products outstanding.

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jungle areas as part of the company's world-wide search for new antibiotic molds and had arranged for distribution of a gift of more than $100,000 worth of modern drugs to the Christian Missions to help fight local disease and infections.

Medical director of the expedition was Dr. Said Kinany of Lederle, who has had wide experience with African disease problems. He was in charge of samples and planned to get soil samples from the upper slopes of Mount Kilimanjaro, where glaciers may have preserved ancient mold varieties.

Dr. Ottati said the expedition studied in particular the campaign in central Africa against sleeping sickness, against which the new antibiotic, stylomycin, has shown promising results.

New Drug Regulations Revised

Extensive revision of the regulations for control of new drugs under the Federal Food, Drug, and Cosmetic Act have been published by the Food and Drug Administration. The objects in view are to meet some of the objections voiced by the Citizens Advisory Committee, and to speed up the administrative work of authorizing the sale of new products. The changes were announced by Food and Drug Commissioner George P. Larrick in the Federal Register of September 8, with an invitation to interested parties to submit their comments within 30 days.

The proposed regulations include a rewriting of the new drug application to include a more complete explanation of the information required in the application, and of the obligations of an applicant to observe the commitments which he has made in his application. Specifically, it is made clear that failure to maintain the facilities and controls described in the application is a basis for suspension.

Commissioner Larrick said that the aim of the proposed changes is "to establish procedures needed to enforce the new drug law, while fully defining and protecting the rights of applicants. In particular, the right to have an 'incomplete' application filed over the protest of the new drug branch opens to applicants a line of administrative and judicial appeal against a possible arbitrary refusal to file an application." He added that the expanded explanation of the information required in an application is expected to assist the drug industry in its preparation of complete and sound applications, thereby minimizing avoidable delays in processing them. The revisions are in line with the recommendations of the Citizens Advisory Committee.

Section 130.3 of the proposed regulations which contains minor revisions in wording from the current section 1.114, includes a requirement that upon written request the shipper of an investigational drug must submit a record of such shipments along with statements signed by the investigators to the FDA new drug branch for examination. FDA explains that it does not propose to enforce this requirement against established drug manufacturers, but intend to use the requirement to reach those persons who seek to use the investigational procedures of the law as a device to avoid meeting the other requirements of the law, such as filing of complete data on safety and efficacy of a product.

The revised application is addressed to the FDA new drug branch rather than to the Secretary of Health, Education, and Welfare. The main changes require disclosure of any omission from the application of reports relating to the safety of the drug, and a statement of the composition and method of manufacture of the drug used in the studies if it differs in any way from that described in the application. The explanatory statement under (2) of the application form suggests inclusion of types of information required for complete identification of components of the drug. Under (3) information is required as to the composition of the drug per finished dosage unit as well as in terms of the batch formula. It requires declaration of any excess added to the batch.

Under heading (4) the application form states in detail information required regarding manufacturing facilities and control. Paragraph (5) requires routine submission of three finished market packages of the drug.

Cuban Tetracycline Patents to Pfizer

Two patents on tetracycline have been issued to Chas. Pfizer & Co. in Cuba by the Ministry of Commerce. The patents (Numbers 15,170 and 15,168) contain process claims covering production of tetracycline by direct fermentation, as well as product claims covering the manufacture, use and sale of tetracycline, regardless of the method of production or type of formulation. Pfizer has instituted legal proceedings in Cuba against E. R. Squibb & Sons Inter-American Corporation for patent infringement, asking for an injunction to prohibit unlicensed sale and distribution of the product. Still pending in the United States are the legal actions which Pfizer brought last January against E. R. Squibb & Sons Division of Olin Mathieson Chemical Corporation, Bristol Laboratories, and the Upjohn Company for infringement of the basic U. S. Patent No. 2,699,-054 on tetracycline seeking treble damages.

Award for Olin Mathieson Offices

Olin Mathieson Chemical Corporation offices at 460 Park Avenue, New York, were judged the best of 110 entries in two categories in awards presented by Management Methods Magazine. Olin's conference room won the prize in this grouping. Of this the magazine says:

"A feeling of intimacy was built into a large room by the use of a concave, acoustical plaster dome which covers 90 per cent of the ceiling area. Beneath the dome, a circular table sets up to thirty persons. The table can be moved for special occasions. One wall contains a world map showing the company's holdings. The opposite wall is draped. The floor of the dining or meeting area is random-plank black walnut. An off-white nylon carpet is used in the television or lounge area. A bathroom and service kitchen are located in the foyer."

The functional office and reception area, which is used to present an imposing picture of the company's

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Hyperabsolue* Mousse de Chêne Selecta
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Intégrale* Mousse de Chêne Yougo

Resinoid Mousse de Chêne Y
Resinoid Oak Moss Extra
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products, won the second award. A 64-foot gallery features examples of many of the approximately 10,000 company products.

F.T.C. Quantity Limit Order Set Aside

Because the Federal Trade Commission failed to make findings in support of a ruling to invoke the provisions of the Robinson-Patman Act which allow the Commission to set maximum limits on the quantities of articles and commodities which may be offered for sale at increasing discounts, its order was set aside by the U. S. Court for the District of Columbia. The court ruled that an order issued by the FTC against the automobile tire manufacturers was invalid. The provision of the Robinson-Patman Act on which the Commission based its order authorizes the Commission to "fix and establish quantity limits when it finds that available purchasers in greater quantities are so few as to render differentials on account thereof unjustly discriminatory." The order prohibited special discounts on tires of more than a carload of 20,000 pounds in a single purchase.

The validity of the provision of the law itself was not directly involved and therefore was not ruled upon by the court. There is a possibility of a reversal of this decision if an appeal to a higher court is taken.

Medical Advertising

Techniques of medical advertising and the growing opportunities for creative talent in this field were discussed in New York last month by officers of medical advertising agencies before a meeting of the Association of Advertising Men and Women. In a symposium moderated by Harry Hoffman, president of the agency of the same name, talks were delivered by Dr. Arthur Sackler, Robert Wilson, Paul Klemtner, and Charles Lewis. Mr. Lewis is vice-president of L. W. Frolich and Company and executive secretary of the Association of Medical Advertising Agencies, and the other speakers are presidents of agencies which are members of the Association.

Pointing out that medical advertising has expanded rapidly during the past fifteen years with the tremendous development in medicine, public health, and the pharmaceutical industry, Mr. Hoffman said that manufacturers have to communicate quickly to the medical and allied professions as one discovery follows another. Product obsolescence is nowhere more striking than in this chapter of the advertising fraternity, he said. "While the 1955 automobile is soon outmoded stylewise, it will do all right for some years," he continued. "In the pharmaceutical field, however, we must be prepared for scientific advances. A new prescription specialty may come out of the laboratories, and if the preparation stands up clinically, the older ones may be antiquated immediately. Who would want any of them for an illness when another is proved better and known to be available?"

Sharp distinction were drawn between the pharmaceutical field and the general consumer marketing operation. Dr. Sackler pointed out in response to a question that the "ultimate consumer chain" here is especially unusual. "The 'ultimate consumer,' the patient, does not choose either type of product or specific brand names," he said. "The choice is made by a specialist, the physician, who is trained to make the choice, which is in effect his therapy. The physician, in turn, can guide his choice by the reports of specialized colleagues who submit the products to intensive and extensive studies and publish their findings in the medical press. Moreover, while the physician himself does not personally use the medication he helps to distribute, his benefits are reflected in a satisfied patient."

This means of distribution represents more than a billion dollars worth of products every year, it was pointed out.

For the agency's part, it is selling "ideas" directly and products indirectly, according to Mr. Wilson. The advertiser must sell the physician a method of treatment. And since the product is for someone else, the appeals that motivate an average consumer can motivate a physician only indirectly. To complete the marketing, the "sale" is made without the presence of a salesman when the doctor writes on his prescription pad. It is consummated at the pharmacy.

Pharmaceutical Research

"As a matter of economic fact, no company can afford to fumble its research chances away," John E. McKeen, president of Chas. Pfizer & Co., told the Group Five Savings Banks Association in New York last month. "If you don't get there first, a competitor will," he warned. "This kind of competition is a hallmark of modern medicine—at least on the business side. It is a guarantee that the body of knowledge called modern medicine will continue to expand. It is manifestation of the drug industry's realization that research is not only good business, but a pre-requisite for staying in business at all.

"Research—vigorous, continuous and costly research—is the lifeblood of modern medicine and the industry. Pfizer, for instance, has this year earmarked about seven million dollars for research, as compared with six million in 1954. The industry as a whole dedicates about four cents out of every sales dollar to research. Only a few short years ago, this ratio amounted to less than one-half of one per cent.

"Size and size alone, however, is no real measure of a research budget or its potential. Riddled with red herrings and blind alleys, research does not always immediately pay off in direct proportion to the amount of time, money, brains, and effort you put into it. Over the long run, however, good research is bound to come up with a winner. Before hitting terramycin, for instance, Pfizer at great cost had to screen and test over 100,000 soil samples from all over the world. And still the treasure hunt for new antibiotics goes on as it has for the last decade. Yet, the number of commercially valuable antibiotics still stands stubbornly at exactly eleven. The industry has spent millions—only to 'rediscover' the same eleven antibiotics all over again.

"This kind of bone-wearying pick and shovel work is not without its consolations. Sometimes research workers turn up things valuable in their own right,

yet not even remotely connected with their announced goal. No research find, however, is without its complications. Some, in fact, can be a two-edged sword. In one fell swoop, a new development can rub out millions of dollars sunk in plant, equipment, and inventory. This is the price of progress—and it can be high."

Cutter Borrows $3,000,000

Cutter Laboratories has borrowed $3,000,000 from Mutual Life Insurance Company of New York. The loan, due August 1, 1975, bears interest at the rate of 4¼ per cent. The 20-year loan is in two parts, with $2,000,000 containing customary sinking fund provisions, and $1,000,000 carrying a conversion feature permitting the purchase of Cutter Limited Voting Stock at $14.25 per share at the option of the lender. Proceeds of the loan are being used to retire the balance of a long term note now held by the John Hancock Insurance Company of Boston, and to retire short term bank loans. The balance will be added to working capital.

Westinghouse Drops Fair Trade

Another of the appliance manufacturers has abandoned fair trade in merchandising their products. The Westinghouse Electric Corporation has dropped fair trade off its household appliances, because, according to a company official, "Actually we believe in fair trade, but under present conditions do not believe it is workable. As conditions change in the future, our price policy might also change."

The Westinghouse defection in the line of fair traders leaves General Electric and Sunbeam Corporation as the major backers of fair trade in the small appliance field. General Electric some time ago abandoned fair trade on its major appliances. Also Procter Electric Company and McGraw Electric Company maintain fair trade programs.

In explanation of Westinghouse's change of heart at this time, the company official said that fair trade had become "increasingly unenforceable" as a result of cut-price selling by discount houses and other stores, catalog selling from non-fair trade states into fair trade states, and refusal of some states to uphold fair trade.

So far as the retailing of drugs and cosmetics is concerned, the more of these appliance and similar manufacturers that abandon fair trade, the better. Fair trade is being branded as unenforceable because these manufacturers of relatively high priced items try to work under the fair trade laws, only to find that the distributing grade will not cooperate with them, and that the public will, in large measure, buy from the retail outlets which offer the lowest prices. Unable to control the discount houses, and in some cases working with them, the manufacturers naturally are unable to get other retailers to adhere to fair trade minimum prices.

There was very little trouble with fair trade enforcement in the marketing of drugs and cosmetics and similar articles. The cooperation of the distributors of these sort of products has always been excellent, and manufacturers of these products have been most prompt in bringing court actions against violators of their fair trade minimum prices. If sufficient of the manufacturers of other types of merchandise will abandon fair trade, then the laws may again be generally enforceable and drug and cosmetic manufacturers and distributors may be spared the merchandising worries which repeal of fair trade would bring.

Bodman Celebrates Birthday

Fenimore L. Bodman celebrated his eightieth birthday and his fifty-fifth year in the drug and chemical business on September 30 with a reception and buffet supper given to friends by the F. L. Bodman Company at the Barclay Hotel in Philadelphia. Mr. Bodman started selling for Parke, Davis & Company in New England, New York State, and Canada in 1900. In 1904, he became associated with Powers-Weightman-Rosengarten Company of Philadelphia and their successors Merck & Co. until 1933. In April of that year he started business for himself as a manufacturer's representative which was incorporated in 1946 and in 1951 changed into a partnership as it is today.

New Under-Secretary of HEW

The new Under-Secretary of the Department of Health, Education and Welfare is Harold Christian Hunt, a Republican, age fifty-three, born in Michigan. He received an A.B. degree from the University of Michigan, an M.A. degree from Teachers College, Columbia University, and an LL.D. from Park College, Missouri. He has been superintendent of schools in various sections of the United States, and has spent most of his life as an educator. Since 1953 he has been Professor of Education, School of Graduate Education at Harvard University. Bradshaw Mintener will retain the post of Assistant Secretary of HEW, and will continue to be particularly active in the operations of the Food and Drug Administration.

Hospital Pharmacy Award

Sister Mary Jeanette, Chief Pharmacist at the Mary Immaculate Hospital in Jamaica, N. Y., is to receive the award presented by the American Pharmaceutical Association for the best hospital pharmacy display during National Hospital Week which is sponsored by the American Hospital Association and was observed from May 8 to May 14. The display award, consisting of a plaque, will be presented at the annual meeting of the American Society of Hospital Pharmacists to be held in conjunction with the convention of the A.Ph.A. in Detroit during the week of April 8, 1956.

Sister Mary Jeanette has been in hospital pharmacy practice for more than forty years. She is a recipient of the Lascoff Award, a past treasurer and member of the Executive Committee of the American Society of Hospital Pharmacists, and has participated in numerous professional activities both locally and nationally.

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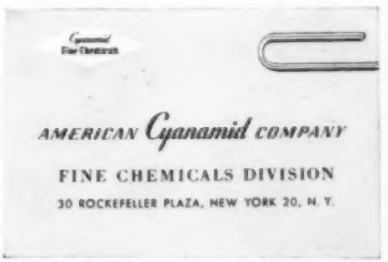
Ever since Folic Acid was declared essential in human nutrition, more and more pharmaceutical manufacturers have been using this important vitamin to attain complete formulas for their products.



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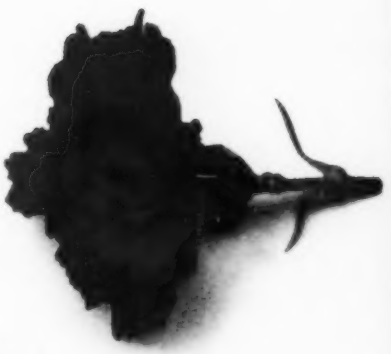

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Mallinckrodt supplies a large variety of vitamins in many forms for human and veterinary use. **Acid Ascorbic USP,** for example, is supplied as a powder, as granules and as fine granules. There is a special grade for parenteral solutions. You can count on obtaining from Mallinckrodt the form of **Acid Ascorbic USP** you need, whether you use it in preparations intended for supplementing human and animal dietary sources, for the treatment and prevention of scurvy or as an anti-oxidant in canned and frozen foods.

When you need vitamins, call Mallinckrodt. Following are the Mallinckrodt vitamins available for prompt delivery:

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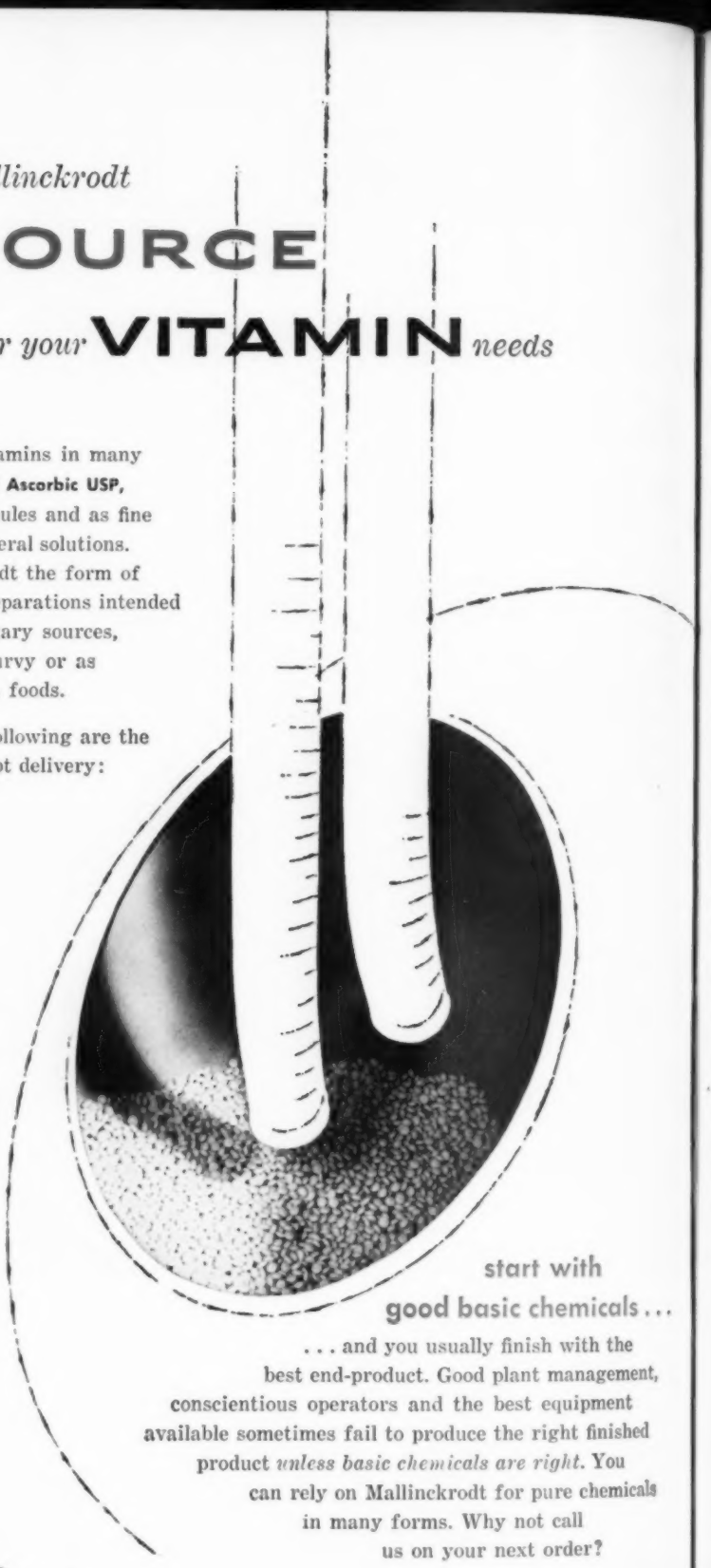
- Thiamine Hydrochloride USP Special (for Parenteral Solutions)
- Thiamine Mononitrate USP
- Acid Ascorbic USP Powder
- Acid Ascorbic USP Granular
- Acid Ascorbic USP Fine Granular
- Acid Ascorbic USP Special (for Parenteral Solutions)
- Pyridoxine Hydrochloride
- Niacin USP
- Niacinamide USP
- Riboflavin USP
- Vitamin B_{12} Solids (for Oral Preparations)
- Vitamin B_{12} Solids – Soluble (for Oral Preparations)
- Vitamin B_{12} Crystalline, 0.1% Trituration of, with Calcium Phosphate Dibasic
- Vitamin B_{12} Crystalline, 0.1% Trituration of, with Mannitol
- Vitamin B_{12} USP Crystalline
- Calcium Pantothenate Dextrorotatory



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To market or not?

THE PROBLEMS OF NEW DRUGS

by Albert H. Holland, Jr., M.D.
MEDICAL DIRECTOR, FOOD AND DRUG ADMINISTRATION

COURTESY SHARP & DOHME

Now, again, to the government administrator. Based on incomplete biological data and recognizing all of the vagaries and variables of biological systems, he has the tremendous responsibility of making a "yes" or "no" decision—to market or not: A task often further complicated by conflicting data and controversial opinions. Yet the law requires a definitive decision, and properly so, if any semblance of order is to be beneficially maintained.

An audience of biological scientists, representing many specialized disciplines, is well acquainted with the scientific method and the interpretation of its results. They can and do apply strict self-discipline in fulfilling its precepts. When, as is often necessary, additional parameters or points of reference are required or useful they seek to design a study program to find the answers. Investigations may prove or disprove the hypothesis at hand but, in any event, information is developed which, when taken together with the rest of the work, constitutes an integrated body of factual knowledge, of scientific knowledge. Whether the scope of the work be narrow or broad, the biological scientists can speak with authority within its confines. When one transgresses the confines of actual experimental observations, however, he immediately recognizes the severe limitations of the laboratory investigations and properly proceeds to qualify his statements and opinions in terms of the data and experience developed. I suggest that the opportunity for such qualification is indeed a scientific luxury. It is a luxury which the biological administrator, particularly in government, can rarely enjoy.

Our Federal Food, Drug, and Cosmetic Act establishes certain provisions—these are the law, and the biological or medical administrator must abide by them. But by definition almost, I think it may fairly be said that all biological data are incomplete as distinguished from inadequate data. There always remain other variables which are unknown in any biological system. This may be further emphasized by the concept that all biological systems are test systems, be they the subject for investigational or therapeutic purposes. At any one time a given bio-system or series of bio-systems may inexplicably fail to respond as predicted or may respond in a hypersensitive, or idiosyncratic, or other adverse fashion. At best, then, we are dealing with bio-statistics in which probability must play a major role. In investigational work, scientists are respectful of these tenets.

Philosophically, the scientist is concerned with facts. He likes them if they are useful and helpful. Primarily, however, science is not concerned with morals, although certainly the scientist is as a citizen. The development of atomic energy is a tribute to man's ingenuity and quest for scientific knowledge, not to the amorality of science or scientists.

Again philosophically, the biological administrator is primarily concerned with the safe and useful application of scientific knowledge and products arising therefrom. He must be intimately concerned with moral concepts incident to widespread use of a product. Safety itself is an expression of morality. It is for this reason that the law establishes mandatory standards and requirements which must be met. Administrative policy is but an espousal of the philosophy of the law.

Now let us see how all of this finds expression in the field of pharmacology and medicinal chemistry. Despite the disease-abating strides, and perhaps to some

extent because of them, in the last two decades we now are faced with medical and pharmacological problems of a complexity which was not heretofore contemplated. We are, I believe, entering a new era in pharmacodynamics, pharmacotherapeutics, and toxicology. With the advent of effective chemotherapeutic and antibiotic agents for the treatment of acute disease, increasing attention has been focused on the therapy of chronic disease. With a few notable exceptions, not until recently did an individual receive daily maintenance therapy, day in and day out for years, for the control of his afflicting disease. Today, this is an accomplished fact. Consider, if you will, the problems this presents to the pharmacologist and to the scientific administrative staff of the Food and Drug Administration. What are the long-term effects with an agent that has not yet been used or studied for extended human lifetimes? No one certainly would deny the value of a two-year, lifetime study in rats, but admittedly it does not provide all the answers. When corticotropin and the cortico-steroids were released for general medical use few, if any, suspected their ulcerogenic potential. Few, if any, anticipated the serious and, on occasion, life-consuming compression fractures. Only long-term, continuous use provided the experience and the knowledge—but at a tremendous cost for some.

Recently synthetic analogues of the cortico-steroids have been developed. On a milligram-for-milligram basis they possess three to four times the anti-inflammatory activity of hydrocortisone. What about the long-term use of these preparations? Will they demonstrate greater ulcerogenic potential? The fact that they are life-saving in some patients unable to be controlled on Compounds E or F was a potent factor in our deliberations which led to their early marketing. In view of their relative inability to cause the retention of sodium and consequent edema formation, a useful safety sign for the clinician, will the natural tendency be to increase the dosage for individual patients? If their ulcerogenic and osteoporotic activity increases proportionately we can anticipate trouble. At the present we are unable to answer these questions to our own satisfaction. To market or not? A decision was mandatory.

Initially the *Rauwolfia* alkaloids were presumed to be without serious untoward effects; just nasal stuffiness and mild diarrhea. Now they are recognized as producing a Parkinsonism-like syndrome which appears to be a function of dose, since it is reversible upon decreasing the dose or cessation of therapy. Of greater import is their ability to induce severe mental depression. This has now occurred in patients treated for simple hypertension where the causal relationship seems unquestioned. These two developments came to light only after the drugs had been marketed.

My able Food and Drug Colleague, Dr. Lehman, has referred to the problem of carcinogenicity resultant from chronic ingestion of a host of substances. As this has become a major pharmacological problem in the chemical, pesticide and food fields, so I believe it will increase in importance in the therapeutics field as we advance in our quest to subdue or conquer chronic disease.

This subject poses some of our most difficult problems. Clear thinking is needed on the part of all of us. For example, if a substance is carcinogenic at any dose level should it be permitted in the nation's food supply? Assume that substance X is carcinogenic in a rat's diet at 1000 parts per million, but does not appear to produce neoplasia at levels of 100 parts per million and less. Would you sanction its routine use in, say, bread or frozen foods? If so, at what maximum level? In just one foodstuff, or in several where the total cumulative dose may be significantly higher? The rats did not sustain lesions at 100 parts per million. What about the cancer-susceptible individual? What about the patient with hepatic disease daily consuming this agent which is metabolized in the liver? Can it or will it be handled in the same way as by a normal liver? Might the rate of metabolism be sufficiently impaired so that a carcinogenic blood level would ensue? Again, what about synergistic or even additive effects with carcinogens from other sources? These are but some of the plaguing questions which remain largely unanswered. To market or not? In large part, the answers must come from medicinal chemistry and pharmacology.

One can argue that we permit the marketing of drugs capable of producing even greater injury—death at some doses—but in small amounts with no observed adverse effects they are exceedingly useful agents—even life-saving. The potential carcinogens produce no observed adverse effects at appropriate dose levels and most are very useful. Is the analogy valid? Is it sound? Where are the facts from science? How about biological data being incomplete? Do we know enough about all of the biochemical and enzyme systems of the body in health and disease to permit us to predict with certainty? What about probability? It is at this negotiating table that science, morality, and progress must face reality and achieve workable solutions for the future.

Another problem of great magnitude is constantly before us with almost every new drug. We have no reliable laboratory method of testing for serious depressant effects on the hemopoietic system. When Kracke and Parker proposed their "benzamine" hypothesis, that is, a benzene ring to which an NH_2 group was attached, there was some reservation about it. They felt that benzene itself was not responsible for the toxic effect but rather that in the presence of an amine group it is oxidized into a quinone, belonging to a group which are known agranulocytopenic agents. More recently Mayer in his work on cross-sensitization showed this to be essentially correct and identified quinone-diimine as the most important in the group. Quinone compounds, strong oxidizing agents, react with proteins and amino acids with the formation of large molecular weight complexes. A quinone, there-

COURTESY ELI LILLY & CO.

fore, playing the role of a hapten becomes a full-fledged antigen and is capable of producing the direst clinical effects on bone marrow. This is believed to be a true hypersensitivity effect. The hypersensitivity manifestations in bone marrow provide ample cause for further elucidating work.

Intravenous fat preparations have received much study during the past few years. The possibility of administering a high caloric intake in a relatively small fluid volume would potentially have important advantages and applications in medicine and surgery as well as for the military casualty. Such preparations could also serve as vehicles for the intravenous administration of a variety of fat-soluble therapeutic agents. To date, however, no one has been successful in preparing a product which does not cause significant reactions on administration.

Let me review a few of these points here for you now because I think they are of interest. These fat preparations often cause an elevation of temperature following administration. This does not occur acutely as one would anticipate in a typical pyrogenic reaction. In contrast, the reaction following IV fat therapy occurs one to four hours later. It has been termed a thermogenic response.

To our knowledge it has not yet been satisfactorily explained. Various investigative and pharmaceutical laboratories have studied it in detail. It seems reasonably certain that it is not due to gram negative materials. Most preparations have been screened on rabbits and from batch to batch the animals may react violently or not at all in their temperature response. Unfortunately this does not turn out, as of now, to be a wholly reliable method of testing since in many instances those preparations producing the greatest temperature increase in rabbits are well tolerated by humans. The reverse is also true. Preparations well tolerated by the rabbit may produce the severest type of reactions in humans, but even this is not a consistent observation.

Another not infrequent observation is the occurrence of low back pain in humans following intravenous fats. This may vary from mild to very severe clutching pain requiring the administration of potent analgesia. No ready explanation fully satisfies the

(Continued on page 567)

The Second Annual Cosmetic Seminar of the Society of Cosmetic Chemists was held September 15 and 16 at the Barbizon-Plaza Hotel in New York City and was attended by 250 persons who came not only from 15 states, but also from Canada and Switzerland. The group gathered for luncheons on both days, as well as for a cocktail party and dinner on the first day, at the New York Academy of Sciences building. The program was organized by Gabriel Barnett of the Richard Hudnut Division of Warner-Lambert and consisted of three sections: The use of Radioactive Isotopes in Cosmetic Research, The Mechanism of Anti-perspirant and Deodorant Activity, and Aerosols in the Cosmetic Industry. Following the final session, conducted tours were made through cosmetic plants in the New York area, participating companies being Avon Products, Inc., Bristol-Myers Co., the Mennen Co., Helena Rubinstein, Inc. and Shulton, Inc.

Cosmetic Chemists

Radioactive Tracer Applications. *J. R. Carlin* of Tracerlab, Inc., in his paper on *Principles and Techniques of Radioisolope Applications* stated that the ability to detect, locate and measure a very minute quantity of a radioisotope, permits tracing any given substance which can be properly "tagged" with radioactivity through a series of chemical or physical processes. Such processes as mixing, wear, diffusion and detergency, which are of special interest to the cosmetic chemist, have been particularly fertile areas of application of this new tool. Thus, it is possible to employ these techniques to measure with precision and sensitivity, the "kissproofness" of lipsticks, the comparative effectiveness of various cleansing products, the absorption by hair and skin of cosmetic materials, etc. However, the use of radioactivity and the results expected, must be carefully weighed against consideration of safety and the cost of establishing the necessary facilities for this research.

Howard J. White, Jr., of the Textile Research Institute delivered a paper titled *The Use of Radiotracers to Study Absorption by Hair* in which he emphasized that absorption processes in human hair and animal wool are of considerable importance in the cosmetic and textile industries. Absorption from aqueous solutions is fundamental to dyeing, waving, bleaching and fabric finishing. If a mass of fibers is immersed in a bath and removed for analysis, the separation of the fibrous mass from the solution is a major experimental problem. Because of the physical nature of the fibers, entrainment of large amounts of solution between the fibers occurs when the sample is removed from the solution. It is logical to expect that separation of entrained and absorbed material would be easier with single fiber samples, and that such a separation can be made in favorable cases. The use of single fiber samples of a convenient length imposes microanalytical problems which are conveniently solved through the use of tracers.

In his paper, **Radioisotope Techniques in the study of Percutaneous Absorption,** *F. D. Malkinson* of the University of Chicago Department of Medicine discussed the advantages of radioisotopic techniques in the study of percutaneous absorption and a brief review of the previously determined salient factors relating to the main pathways of absorption were given. Experimental data pertaining to absorption of such compounds as water, electrolytes, hormones, and gases were specifically considered, and discussed in the light of recent observations utilizing radioactive isotopes. The effects of different forms of skin injury on percutaneous absorption as determined by topical application of radioisotopic substances were described. Observations of specific measures undertaken to prevent absorption through the skin were also recounted. The experimental findings of E. Ferguson and the author were presented to illustrate the application of radioisotopic techniques to the study of percutaneous absorption of hydrocortisone, and preliminary results of this work were reported.

M. F. Nelson, Jr. and *D. Stewart, Jr.* of the Colgate-Palmolive Co. and Rutgers University discussed **The Adsorption of N. Acyl Sarcosines on Various Protein Materials.** Synthesis of the N-Acyl Sarcosine tagged with Carbon^{14} was accomplished using bromacetic acid-1-C^{14} as the starting material. The resultant substituted sarcosines were consequently tagged in the carboxyl position. Evaluation of adsorption of N-Acyl Sarcosines by protain materials was undertaken in two ways and adsorption studies were carried out on granular casein, gelatin, virgin human hair and hair that had been damaged with peroxide, using both

Seminar

the sodium N-lauroyl and sodium N-palmitoyl sarcosines. Results obtained indicate that within certain limits adsorption increases with a decrease in pH and an increase in exposure time. It was found that solution concentration also affected the adsorption on both damaged and normal hair, and that an optimum concentration was attained for both the sodium N-lauroyl and sodium N-palmitoyl sarcosine on virgin hair.

Antiperspirant and Deodorant Activity. *M. B. Sulzberger* of the Department of Dermatology and Syphilology of New York University-Bellevue Medical Center, in his paper *The Clinical Significance of Disturbances in Sweating* pointed out that modern studies have shown that a distinction must be made between the secretion (elaboration or manufacture) of sweat and its propulsion to, and delivery upon, the skin's surface. Even though these functions are generally correlated, it is clinically not uncommon to find their dissociation; for example, impaired delivery through the ducts even while manufacture continues in the secretory portions of the sweat glands. A third category of disturbances comprises those which are based on what happens to the sweat after it is delivered to the skin's surface. The ill effects which these three categories of disturbances can initiate or aggravate, either alone or in their various combinations, include a host of different pathological happenings. Many of these happenings are local, and dermatologic; while others affect various organ systems or even the entire human organism.

Among the almost numberless local ill effects of disturbances in sweating the following may serve as selected examples:

Sweat retention below the skin's surface and its intradermal injection into the cutaneous tissues by faulty pathways. This can lead to different kinds of local dermatologic troubles, including the sensory disturbances of pricking or itching, and to skin lesions such as vesicles, papules, pustules, etc., as well as to allergic sensitizations and irritations by the sweat itself and by the drug, food and other allergens and irritants which it may from time to time contain.

Locally excessive sweating, or locally absent or deficient sweating, or local impairments of sweat evaporation all can lead to various bacterial and fungous infections of the skin, to intertrigos, to bromhidrosis, etc.; and also contribute to the lesions of many common skin diseases.

Just how the sweat retention syndrome may actually be brought about by the lesions of certain very common skin diseases, and how the effects of sweat retention and intracutaneous injection of sweat and its contents can then in turn lead to production or aggravation of the original type of skin lesions were considered in detail.

Finally there was a discussion of some newer findings dealing with the reciprocal emulsifying and spreading properties of ether-soluble substances (e.g. sebum), and of sweat on the skin's surface. The enormous roles of the properties of this surface emulsion, the as yet immeasurable importance of the proper constitution, quantity and relationships of the constituents of the human skin's film surface and of the horny receptacle formed by the meshwork of the stratum corneum were illustrated. Among other points it was argued that the proper delivery of sweat and its proper spread, and the proper delivery of sebum and its proper spread, are largely interdependent; and that the normal health of the human skin depends in considerable measure on this emulsion and its keratin receptacle, and upon the hydrating and other emollient

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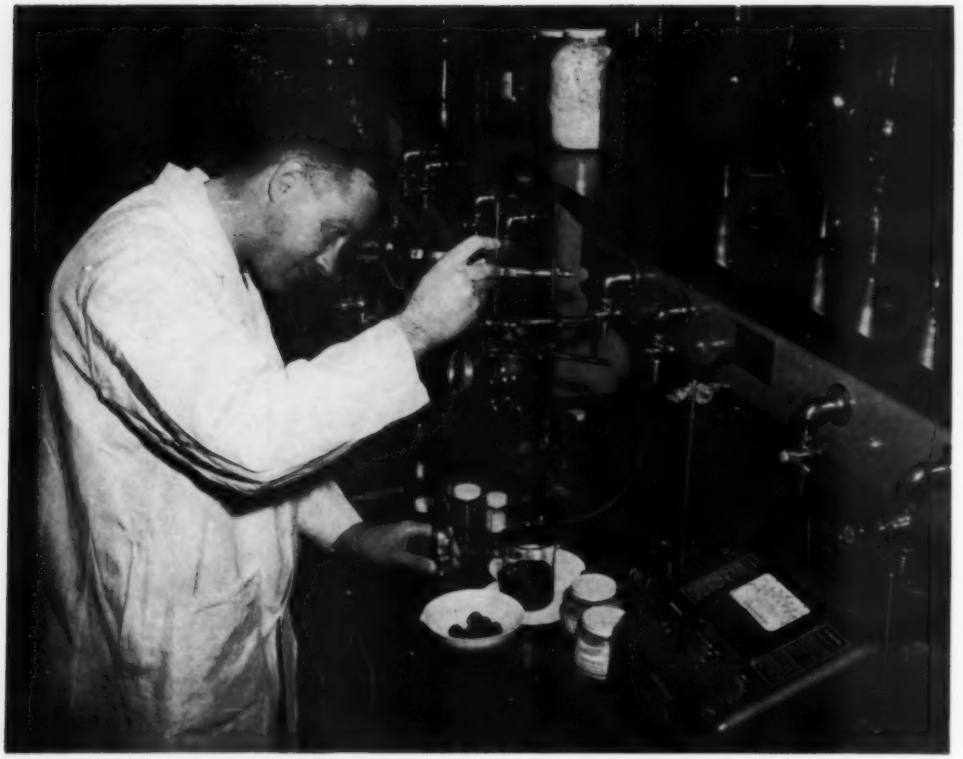

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Unexpected

by Victor G. Fourman, Ph.D.

PRESIDENT, SYNTOMATIC CORPORATION

The notion that the more evil-tasting the curative the more effective the cure stems from the Dark Ages. It is a thesis which today is the exclusive concern of anthropology, and not pharmacology. The greatest challenge presented to flavor chemists is the proper flavoring of pharmaceutical products. Unlike the well-baked cake, the well-formulated pharmaceutical often has, if not evil-tasting ingredients, at least those which by a kind euphemism can be described as unpleasant. In flavoring such products as confectionery, beverages, ice-cream, sauces, and a host of other foods, it is usually not necessary to mask any undesirable taste as the material often already contains ingredients which enhance its palatability.

Many modern remedies, on the other hand, widely used and of immense therapeutic value, are extremely disagreeable to the palate and not easy to swallow. To cite a few examples: chlortetracycline hydrochloride is excessively astringent as well as bitter; oxytetracycline hydrochloride has an unpleasant taste. This is especially true for penicillin G. potassium and sodium, saline compounds such as ammonium chloride, and bitter ones such as quinine hydrochloride.[1,2] "Flavor," states Crocker,[3] "influences the acceptability of nearly everything that passes the lips, whether it be food, beverage, tobacco, *medicine* (italics mine) or tooth paste." As far as the present writer knows, this description of what flavor accomplishes was never better worded. There are in existence today medicinals which originally appeared on the market about half a century ago, but the great majority of these have had their pharmacological patterns completely altered because the extensive list of ingredients used at present was unknown only two decades ago. A number of preparations of long standing and reputable history still cling to the old-fashioned mint, orange, or cherry flavor which they had when grandfather was a young man. "Now that we have even changed the color of our Elixir," said a chemist in an important laboratory, "nothing remains but the flavor of the original formula; I suppose this will be retained so as not to destroy the continuity of the established order of things." The flavor, whose "secret" was revealed to us, consisted of Oil Peppermint, U.S.P., a trace of Bulgarian Rose Otto and Oil Estragon. Years ago such additions and modifications were considered arcane mysteries in the art of compounding. Because of the numerous new and unex-

Pharmaceutical Flavors

pected flavors now available to pharmaceutical manufacturers, they no longer have to depend on the standard flavors which are so limited in scope. Until recently few cough syrups, for example, were flavored with anything but cherry; to attempt some departure from the usual practice, "wild cherry" was sometimes used. Among the unexpected types which should be considered for such products are: blackberry, tutti-frutti, peach, and loganberry. Combinations of some of these lead to excellent and individual results when the blending is based on skill and experience rather than on random guess. For many years Aromatic Cascara Sagrada Fluidextract and similar preparations have been flavored with a combination of anise and coriander oils together with saccharin and methyl salicylate. This method is effective in masking the pronounced bitterness of cascara but it is no reason for always depending on four specific ingredients to help solve problems of a related nature. Many variations which lead to interesting results are possible. The addition of small amounts of terpeneless lemon or lime to such essential oils as coriander, nutmeg, and cassia are worthy of consideration, so too, the use of traces of neroli, fine vanillas, and a number of specialties.

Whatever the characteristics of the flavor, the efficacy of the therapeutic agents would not be a cubit more nor a cubit less. Were they to contain no flavor at all, this would also be true. During the last quarter century there have been extensive changes in the packaging of drugs, styles of labels, types of closures, and in the appearance of the products themselves.

Such external improvements do not change the value of the medication *per se*, yet they are worthwhile contributions to the status of the industry. Experts like Dr. Ernest Dichter[6] can best explain by means of motivational research the appeal of what the public buys and why. To improve the flavor, then, to make it more interesting and unexpected, is to do for the product what improved packaging does, only more so, because neither bottle, box nor label come in contact with the internal physiology of the patient.

(Continued on page 560)

FACIAL MASKS

by Harry Hilfer

Face Masks are among the oldest of the cosmetic preparations. Their popularity however has ebbed and risen over the years, but unlike some of the earlier preparations now obsolete, they have never completely lost their popularity, and at the present time they appear to be coming to the fore again.

There have been many different types offered by the cosmetic industry and they include the old mud packs, astringent creams and therapeutic masks and in many cases combinations of all three in a single product. Occasionally there has been incorporated a mild irritant which had a "stimulating" effect on the skin. However, the principal effect of these creams was an apparent feeling of tautness, imparted to the facial tissues after application due primarily to the evaporation of the water and subsequent contraction of the film as a result.

A secondary effect was the removal either by absorption or by trituration of some of the dead skin during application and subsequent removal of the film. The old mud packs, particularly made claims in this direction. The mud packs and their modern day descendants have enjoyed the greatest popularity in this classification and the discussion will therefore be primarily about them. The principal effect from the mud packs is an adsorptive one which helps to remove superficial soil and dead superficial skin. The more primitive creams were therefore based on the inclusion of some natural silicious earths in which these properties were inherent. The term "mud packs" were therefore literal deceptions since their color resembled a brownish mud. The sources of these materials covered a wide range including the common material clays, infusorial and diatomaceous earths. In a good many cases casein was also used since on dehydration it formed a mask-like film readily. With these substances as a base refinements were made in which the pH was fixed to suit the function for which the mask was to be used and the slightly alkaline pH specified for oily skins while the neutral or acidic pH specified for normal skins.

Further refinements were made in the choice of raw material. As the purification of these muds progressed, the more adsorptive materials were used. In time the choices became different types of inorganic silicates of which the most notable are bentonite, fullers earth and kaolins. These substances are all described as colloidal hydrated aluminum silicates, some of them containing magnesium silicates. They are all characterized by having a small particle size and therefore presenting a large area for adsorption and are capable of forming gels with many times their weight of water. The pH of these substances are slightly alkaline but can tolerate enough of a weak acid so that its pH could be made neutral. In addition there have appeared on the market materials which have been more highly processed to improve both the color and the absorption poten-

tial. A notable example of this is the Veegum produced by the R. T. Vanderbilt Co. which is described as a complex colloidal magnesium aluminum silicate, derived from a naturally occurring base by their own refining process. This compound produces a better looking cream than does for example bentonite because of its better color.

Pastes may be readily made from these silicates since they are capable of adsorbing many times their weight of water and forming stiff gels. After application the water evaporates causing a pleasant cooling sensation and at the same time a feeling of tightening of the tissues. The rate of evaporation may be easily controlled by additions of humectants such as glycerol. The adsorptive process begins with the application of the gel and continues during the period of evaporation and beyond. The face mask owes its principal beneficial property to this property, but many manufacturers add other substances so that additional claims may be made. This will be discussed later.

The easiest method of manufacturing is by small additions of the earths to hot water with good stirring. After incorporation of the earths with good distribution a milling operation usually smooth the cream even further and this type of processing is therefore recommended. The quantity of the earths used in the formula depends on which are used and the stiffness of the desired gel. The literature shows formula containing as much as 50 per cent of the silicious earths, but the newer types may be made with as little as 10 per cent. The quantity of humectant added would have somewhat of a bearing on this, since generally speaking, they exert a softening effect on the gel.

Among other additives, ethyl alcohol is in use to enhance the cooling effect which many manufacturers desire. Such an addition increases the evaporation rate and therefore has a greater cooling effect. If a tingling sensation is desired, there is sometimes incorporated substances such as Balsam Peru and sometimes resorcinol. Preparations of this type depend on producing a mild irritation and are therefore not as popular as they used to be. Another type that used to be popular was one which included a hydrogen peroxide-urea compound—according to Harry (Modern Cosmetology—Ralph G. Harry Third Edition—p. 58). In this connection Harry advises that citric acid be added to assure a pH at which the peroxide would be stable. Other precautions would be to eliminate all traces of iron, copper and other pro-oxidants. Such a product would be useful as a bleaching mask.

The mask-like qualities of the cream may be enhanced by the inclusion of a gum. Indeed many of the masks depended completely on the formation of a film by a gum and this inclusion is made so that the film could be made a more continuous one than without it. The use of tragacanth (17 per cent) in this connection was recommended as well as the synthetic methyl cellulose or carboxymethyl-cellulose. These additions could possibly have a stabilizing effect on the emulsion as well since the water phase would be less likely to "leak."

These masks may be used as the basis for incorporation of therapeutic agents as well since the silicious compounds are quite capable of keeping normally insoluble substances in suspension. Substances such as sulfur may therefore be easily incorporated. A phenol sulfur combination—salicylic acid among others are in fairly common use.

This cream is a very versatile agency in addition for the incorporation of bacteriostatic compounds. There are a number of bactericides available which enjoy good popularity for topical application. The cream therefore becomes a good medium for the removal of surface impurities as well as the prevention of possible infections due to the presence of surface flora. The adsorption properties of these earths are demonstrably good and though they may be selective in their activity a mixture of them could conceivably cover a range which would include all conceivable superficial impurities. As far as I know there has been no work done to determine the range of selectivity of the various agents used, but such a study could conceivably result in a product which would be an excellent aid to the enhancement of the beauty of the skin.

COURTESY GERMAINE MONTEIL

ANTIBIOTIC

MINOR ANTIBIOTICS FOR

	BACITRACIN U.S.P.	NEOMYCIN SULFATE U.S.P.	POLYMYXIN B SULFATE U.S.P.	TYROTHRICIN U.S.P.
Origin	Bacillus subtilis	Strep. fradiae Waksman	Bacillus polymyxa	Bacillus brevis Dubos
Form	Almost or completely odorless white or pale buff hygroscopic powder. Polypeptide.	White to slightly yellow odorless powder or crystals of the sulfate. Forms sulfate, hydrochloride, picrate.	White to tan, odorless light fluffy amorphous powder of sulfate. Basic polypeptide. A, B, C, D, E, known.	White to buff odorless, almost tasteless powder. Consists of about 60% tyrocidin and 20-25% gramicidin. Polypeptide.
Solubility	Freely soluble in water. Soluble in alcohol, methanol, glacial acetic acid, isopropanol, butanol. Insoluble in acetone, ether, chloroform.	1 gram soluble in 1 ml. of water. Very slightly soluble in alcohol. Insoluble in acetone, chloroform, ether.	Freely soluble in water. Soluble in methanol, slightly soluble in alcohol, insoluble in ethers, esters, lactones, hydrocarbons, chlorinated solvents. Base has limited solubility.	Practically insoluble, in water. One Gram dissolves in 15 ml. of alcohol. Freely soluble in glacial acetic acid, slightly soluble in acetone, insoluble in chloroform or ether. Solubilized by surfactants, formaldehyde.
Stability	Solid—No loss of potency after 15 months at 37°; rapid loss at 56°. Aqueous solution at pH5-9 retains 90% of activity after 2 months at 4°C. Activity rapidly lost at 25°. Precipitated and inactivated by heavy metals.	Dry solid stable for 2 years at room temperature. Solutions stable at pH2-9 and retain potency for 1 year at room temperature. Color of solutions deepens at room temperature and 37°. Stable and active in alkaline solution.	Stable in solid form at least 3 years at room temperature. Thermostable in aqueous solutions and dilute alcohol solutions near neutrality. Deactivates rapidly at room temperature in strong acids or alkalies. Activity not affected by pepsin, typsin, pancreatin. Refrigerated solutions stable for at least 6 months.	Stable indefinitely in dry form. Incompatible with alkalies and strong acids, but stable to pepsin and trypsin.

TABLE

TOPICAL AND ORAL USE

	BACITRACIN U.S.P.	NEOMYCIN SULFATE U.S.P.	POLYMYXIN B SULFATE U.S.P.	TYROTHRICIN U.S.P.
Units and assay	The Unit of bacitracin is equivalent to 26 mcg. of the FDA working standard. Microbial assay.	Microbial assay. No units (1 Waksmann unit is equal to 3.3 mcg. of the base.)	One milligram of the hydrochloride is equal to 10,000 units. Microbial assay.	Microbial assay. No units.
Spectrum	Effective against wide variety of gram positive organisms—streptococci, staphylococci, pneumococci, clostridia, spirochetes and some gram-negative cocci. Ineffective against most aerobic gram-negative bacilli. Bactericidal.	Effective against variety of gram-positive and gram-negative bacteria. Wider spectrum than bacitracin, penicillin or streptomycin. Sometimes effective against Pseudomonas and Proteus.	Highly active against gram-negative bacteria, including E. coli, S. typhosa, etc. and B. pyocyaneous. Bactericidal.	Susceptible organisms are pneumococci, streptococci and staphylococci and most gram-positive cocci. Inhibits enzyme action. Retards growth and causes lysis of susceptible bacteria. In vitro activity against Trichomonas vaginalis.
Oral Use	Not absorbed from gastro-intestinal tract, no toxicity. Useful for intestinal amebic infection. Dosage up to 120,000 units daily.	Useful as intestinal antiseptic. Poorly absorbed from gastro intestinal tract (3% absorbed) and rarely produces systemic effects. Dosage to 10 grams daily. Mild laxative action.	Useful in non-systemic treatment of intestinal infections such as Shigella or Ps. enteritis. Poorly absorbed and no toxicity noted. Dosage to 400 mg. daily.	Useful only in direct contact with micro organism. Slightly inhibited by saliva. Useful and non-toxic in throat lozenges, mouth washes. Not absorbed orally.
Topical Use	Used as water soluble or petrolatum ointment or aqueous or saline solution for infections of skin, eye, nose or throat. Use 500 to 1000 units per gram or cc. No sensitization. Little development of resistant strains.	As solution or ointment for pyogenic dermatoses, impetigo, wounds, burns, ulcers, conjunctivitis, sty. Non-irritating. Low sensitization. Solutions contain 5 mg per cc., ointments 5 mg. per gram.	For treating local infections caused by gram-negative bacilli especially Ps. aeruginosa. Ophthalmic ointment 20,000 units per gram. No bacterial resistance or sensitivity.	Useful in treating wound infections, stable, in presence of pus. Wet dressings stimulate tissue growth.

OILY CREAMS

by Joseph Kalish, Ph.D.

In this concluding article of a series of trade-name formula articles it may be useful, as much to clarify our own views as to instruct, to discuss and speculate on the nature of emulsions. This is especially pertinent in relation to the formulation of oily creams (and oily lotions) since these products can go sadly awry if formula balance is not all that it should be.

Ideally, an emulsion consists of globules of one liquid (the internal phase) moving about in another immiscible liquid (the external phase). Such a mixture is notably unstable, the moving globules colliding and coalescing so that in time two separate layers of liquid result. Differences in the specific gravity of the two liquids speed up the operation since the globules tend to collect either at the surface or in the lower layers, become packed, and join together to form first larger globules and finally a continuous layer. If globules of the internal phase are made very small, their Brownian movement overcomes the action of gravity and coalescence is retarded. Another stabilizing factor is the presence of an electrical charge on the surface of the small droplets, as a result of the adsorption of individual ions on the surface. These like-charged drops thus tend to repel each other and the joining-up process is retarded. The addition of small amounts of electrolytes to an emulsion stabilized by an adsorbed ion electrical charge tends to neutralize the protective electrical layer and the emulsion is quickly destroyed. In any event, simple emulsions of this type can exist for any length of time only if they are extremely dilute, so that collisions between globules is relatively infrequent. These "classical" emulsions have little practical importance and theories concerning their behavior have little application to the behavior of far more complex and stable emulsions made for cosmetic purposes.

If the individual globules of the internal phase can be coated with a resistant material, the globules will not readily combine after a collision: this is the case when emulsions are stabilized by very finely divided solids which form a protective coating on the globule surface. These emulsions are usually formed when they are not sought, in chemical reactions and separations, and they usually constitute a nuisance rather than a useful product.

A further improvement in emulsion stability is attained by the use of surface-active agents. Molecules of these substances accumulate at the surface of the liquid in which they are soluble and form what constitutes a protective layer; by their action on the surface tension, or more properly the interfacial tension, they promote the formation of smaller droplets so that they have a doubly beneficial influence on the stability of the emulsion. Under some circumstances depending upon the nature of the two phases and their relative concentration, emulsions thus constituted can be quite stable.

For the most part, however, the most effective emulsifying agents do not act by simply reducing

interfacial tension and forming a protective coating around the individual droplets of the internal phase. As a rule, a sufficient quantity of the emulsifier or combined emulsifiers creates profound changes in the composition of both the internal and the external phases with resultant wide variation in physical properties from those ideally expected. Our view, based largely upon the literature, as well as from personal experience and observation, is that surface active agents pick up liquid molecules at active points to form so-called micelles, relatively large agglomerates of surface active molecule with one or both of the liquid phases. If a single emulsifier is used in the system, the micelles will be of one type and contain predominantly only one of the liquids. Using a water-soluble surface active agent as an example, individual molecules will pick up a more or less large number of water molecules to form a slow-moving molecular complex. A certain number of these will coat the oil globules and prevent coalescence on contact. If, however, an oil-soluble emulsifier is also present, it will pick up predominantly molecules of the oil phase. When both of these complexes migrate to the boundaries between the oil and the water, they reinforce each other and further stabilize the globules and thus stabilize the emulsion. Still another contribution of the micelles is that a substantial proportion do not stay at the boundaries but remain within the body of the preferred liquid and modify its properties. Thus, with the combination, both the oil and the water are modified so that their respective specific gravities and viscosities become more nearly alike and the mixture assumes a new set of properties. The final result is that virtually none of the ingredients retain their original physical properties. In an oil-in-water emulsion established by a combination of oil-in-water and water-in-oil emulsifying agents, the internal oil globules will contain in solution agglomerates consisting of the water-in-oil emulsifier combined with oil and some water. At the surface of the globule, these will tend to concentrate and form a protective envelope. The same phenomena are also occurring in the aqueous phase, with the oil-in-water emulsifying agent containing its water and some oil molecules tending to concentrate at the oil-water boundary. The two types of micelles mingle and reinforce each other and the envelope becomes a virtually impermeable cushion. Since many surface active agents are insensitive to electrolytes as well as to other chemical reagents, the resulting emulsion may have considerable resistance to breakdown by additives. The amount of emulsifier present and its ability to hold more or less of both the oil and the water (hydrophile-

(Continued on page 544)

CLARIFYING Skin Freshening Lotions*

by William R. Keithler

The function of a skin freshener is primarily to invigorate, stimulate, and freshen the skin, and at the same time act as a cleansing and antiseptic lotion. To accomplish these tasks, various raw materials, ranging from alcohol to hexachlorophene, are used. These products are not difficult to manufacture if the normal precautions of control and uniformity are adhered to.

The most important part of the manufacture of any lotion based upon an alcoholic solution is that of proper clarification. This can be a very serious problem, even in the relatively simple formulations, but with adequate care, a clear, stable, uniform product can be easily obtained. It is necessary for the potential manufacturer to be aware of the possible pitfalls of alcoholic lotion manufacture.

There are several types of cloud or sediment, and in the actual sense of the word, there is a distinct difference between cloudiness and sedimentation. Cloudiness, as we use the expression, means a fine dispersion of particles in permanent, or semi-permanent suspension, in a normally clear liquid. Sedimentation has been taken to mean a settling out of an insoluble substance while the product or mother liquor remains clear. However, it is not unusual for both conditions to exist in the same system. The over-all effect produced in the product by either one or both of these conditions is very detrimental, both to reputation and to repeat sales. Although in many cases the formation of cloud or sediment actually does not effect the activity of the product, the consumer is of the opinion that a cloudy product is a poor one. Sedimentation and cloud are automatically associated with filth.

Depending upon the type of product, the sedimentation may be light and subsequently float upon the top of the liquid, or it may be heavy and settle to the bottom of the container. It may be of a crystalline or powdered nature or it may be in the form of a flocculent slime. In the case of very fine particle size, the precipitate takes the form of a cloud. This cloud may cause a change of color in the finished product, due to the refraction of light, or to the color of the precipitate.

Cloudiness and sedimentation can be attributed to three major causes—chemical, bacteriological, and mechanical. The chemical changes that can bring about these conditions are primarily those of oxidation reduction and hydrolysis. These reactions are usually catalyzed in one of three different manners—by heat, light (usually ultraviolet), and of course, time. Light is an important catalyst. If it is not possible to revise the formulation so that it is not photosensitive, the situation can be remedied by either adding a light screen, which is capable of absorbing those light rays responsible for the oxidation, or by simply packaging the product in an amber bottle. Chemical changes due to incompatabilities is entirely the fault of the formulation and can be remedied by removing the incompatibles. This can not be done with a "pot-pourri," a complex mixture. The best method of rooting out the trouble maker is by experimentation. That is, manufacturing the formulation several times, leaving out one different ingredient each time.

Within the realm of incompatibilities are several causes of sedimentation. Iron and other metals sometimes cause a discoloration or precipitation when present in certain media. These metals have an especially adverse effect upon soap solutions, since through chemical reaction, insoluble soaps of the metals are formed. Dyestuffs are particularly sensitive. They will change color or precipitate if and when the pH of the media is changed. The vegetable dyes, such as tumeric, are especially prone to sedimentation. The perfumes are sometimes at fault when a product has clouded. In a case where there is not enough mutual solvent, such as alcohol, to keep them in solution, they will precipitate and cause a cloud. Most of these causes can be eliminated if the product is properly aged before the filtration.

*Reprinted from the book, "The Formulation of Cosmetics and Cosmetic Specialties," which will be published next month.

COURTESY FRAGRANCE FOUNDATION

Super-saturation cannot be considered a chemical change, but a physical one. In a case where there is insufficient solvent for the quantity of solute present, the cloud or sediment usually is crystalline. This situation can, of course, be remedied by simply reducing the total solids. If this cannot be done, or is undesirable, a more effective solvent must be used in the formulation.

Bacteriological causes of sedimentation are usually rare in the alcoholic lotions. However, there are exceptions to the rule. This condition is more common in low alcohol content systems. This statement cannot be taken as law, for there are certain mutant strains of bacteria that can thrive, even upon a media such as sulfuric acid, so that there is a possibility, no matter how remote, of bacterial contamination. Bacterial contamination can usually be discovered merely by observation as most of the common strains form a stringy, or mucilaginous precipitate. This precipitate is actually the bacteria colony. Molds and fungi cause somewhat the same manifestations. This problem can be overcome by the use of preservatives. A complete chapter in this book deals with the subject of preservatives.

Under the heading of mechanical causes of clouding and sedimentation come improper aging and faulty filtration. Either one or both of these operations can cause precipitation.

All the alcoholic solutions, especially those containing ingredients insoluble in water, should be aged before filtration. This aging is undertaken for two reasons. First, it allows those materials prone to easy precipitation to settle out of the solution; and secondly it mellows the perfume and eliminates the inherent harshness, due to the formation of small quantities of aldehydes and ketones otherwise not formed. The length of time a product should be aged must necessarily be left up to the manufacturer. The longer the aging period, the better the quality of odor and the less likely future precipitation will occur. Two week aging time has been arbitrarily set as a minimum. However, depending upon the product, and the manufacturer, this period can be either lengthened or shortened.

There are many filters available and almost any one of them will do an excellent job, if operated properly. Although there are different filters designed for different types of liquids, most small manufacturers use one or two filters for any and all operations. The only important question to be answered when choosing a filter is that of corrosion. Will the liquid to be filtered corrode the metal out of which the filter is made? This question is best answered by the manufacturers of the various filters. There are, of course, other things to look for in the choice of a filter. Such things as capacity; type, that is whether vacuum or pressure; the use of filter aids in conjunction with the filter; and

(Continued on page 563)

Market research and pharmaceutical advertising

Part 2: conclusion

by John N. McDonnell, D.Sc.
VICE-PRESIDENT, SCHERING CORPORATION

Are Industry Marketing Data Available?

The pharmaceutical industry, as is true of the chemical industry in general, is probably the poorest of all industries when one looks for dependable statistical material or research data. Professional and trade journals do not provide information on annual advertising volume by company or by product, a standard procedure in most other fields. Trade associations, unlike most other industries, are sterile as sources of research data. This is a challenge to the market research group which should not go unheeded.

Determining Response

No matter how clever or interesting advertising may be in the opinion of the Advertising Department of the Agency, one can now seldom predict the physicians' response to it.

Reaction and Opinion Surveys

Opinion surveys are a most important service of Market Research to Advertising, either before or after the fact. Many an error in thinking has been corrected in advance by the simple expedient of trying it out ahead of time on the consumer. We have been most successful with this technic, our Research Department using a flexible panel of physicians, another of pharmacists, and even on occasion, of the lay public.

There are many instances where a cross section of physicians' reaction and opinion, and these terms are not synonymous, is of value in the preparation of medical promotion. We have asked physicians about certain of our promotional novelties and from their response succeeded in eliminating in advance possibly controversial aspects when the devices were released nationally. Several institutional advertisements were carried into finished form and when along with other similar promotion pre-testing among panel physicians revealed almost general criticism of the inclusion of "ethical" specialty trade names in the copy, the program was revised. Still a third example of pre-testing is to be found in the care with which we evaluated our house organ "Medicine in the News." When first developed some years ago, we first prepared a complete issue and sent it to a few thousand physicians throughout the country. Half of these were questioned by mail, and a representative of the others visited in person to determine their response and acceptance of the new publication. It was evident that the doctors liked the idea, and many presented helpful comments and suggestions which improved it. This procedure is being repeated now as we revise its format and content.

Here, Research can help Advertising materially. For instance, in one noteworthy survey, our research group took to our physicians' panel a monograph whose format, impact, and readership were disputed. All identifying company and trade names were removed.

We found that the size, format and general approach were well accepted. Many of the physicians actually recalled reading the particular piece in detail. Some had actually liked it enough to file it. However, we were chagrined to discover that we must have been too modest—for only a few physicians could recall which company sent it, or the specific trade names included. We continue with this format and approach, but you can be sure that we have strengthened our company and product identification.

Later, another similar analysis of this monograph format confirmed its wide measure of physician acceptance, and added additional good suggestions for improvement. Thus, thinking can be stimulated and progressive changes brought about in some of one's advertising methods.

(*Continued on page 555*)

Packaging and Selling

Grove Laboratories has designed new packages for its Bromo-Quinine Cold Tablets and Four-Way Cold Tablets. These new containers are being used exclusively for supermarket merchandising. This marks the very first time that any big-name proprietary has been repackaged solely for the supermarket.

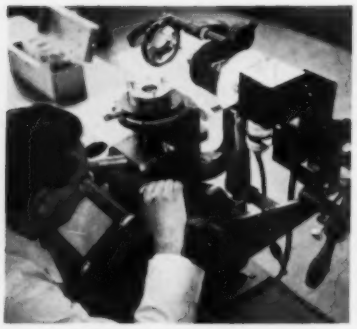
Packed in cigarette-size boxes, the cold tablets are each sealed in "Health Guard" cellophane strips and were distributed to the supermarkets about the first of this month.

Russell A. MacDonnell, Grove vice-president of sales, stated that almost 90 per cent of the grocery store customers bought either Four-Way or Bromo-Quinine Cold Tablets last season and predicted that during the approaching season Grove's biggest advertising campaign in its history will "send even more customers and more profits your way."

The new package design, the first basic change in many years, gives added protection against pilferage and gives grocers a package with greater visibility, Mr. MacDonnell said.

Bromo Quinine was introduced in 1893 and Four-Way Cold Tablets, in 1935.

OWENS-ILLINOIS ASSURES YOU A



Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.

Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.

The Right Container

Versatility of facilities and talents points to Owens-Illinois as your best source of supply for a wide range of specialized needs: containers where beauty, utility and tradition are blended in the proportions required by different product classifications.

Containers with Beauty...

COMPLETE PACKAGING APPROACH

The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.

Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

for Beauty's Products

Win customers for your product with the grace of a Duraglas salespackage

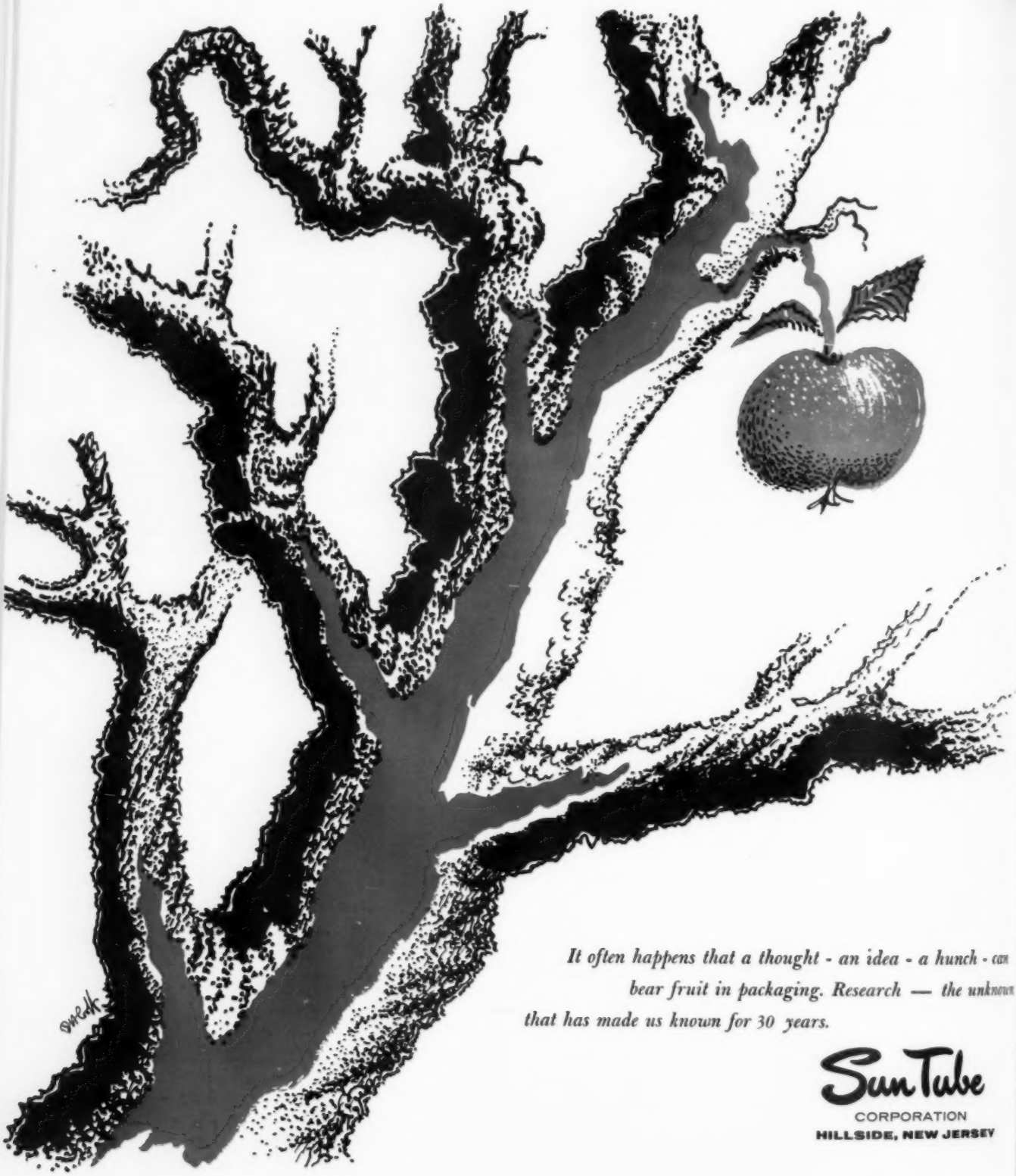
First step in a sale is to catch the customer's eye—to express the quality and personality of your product through its package.

To help you do that, Owens-Illinois will provide a package designed to stimulate sales . . . a package engineered to protect your product, make it convenient to use—and thereby build repeat sales.

So with Owens-Illinois you have a marketing-minded supplier ready to provide complete packaging service—glass containers of all types, capacities and designs, metal and plastic closures, merchandising cartons.

DURAGLAS CONTAINERS
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES · TOLEDO 1, OHIO



It often happens that a thought - an idea - a hunch - can bear fruit in packaging. Research — the unknown that has made us known for 30 years.

Sun Tube
CORPORATION
HILLSIDE, NEW JERSEY

SUN TUBE CORPORATION, HILLSIDE, NEW JERSEY, Waverly 3-0400

St. Louis 1, Missouri: Marvin Yates Co., Arcade Building
Cincinnati 8, Ohio: Ralph H. Auch, 3449 Custer Road
New Orleans 19, Louisiana: R. P. Anderson Co., 925 N. Solomon Pl.
Houston 19, Texas: R. P Anderson Co., 5643 Overbrook Lane
Lombard, Illinois: Delmer Ring, R.R. #1, Swift Road
Dallas 2, Texas: R. P. Anderson Co., 1122 Texas Bank Building
West Coast: Wm. J. Stoepler, 301 E. Colorado, Arcadia, California
Canada: Sun Tube Corp., 145 Spruce Street, Ottawa, Ontario
Mexico: Tubos de Estano, S. A. de C. V., 174 Orizaba No. 267. Colonia Monterrama, Mexico, D. F.

Polyethylene and Phenolics in Packaging*

by J. K. Honish

ASSISTANT MANAGER, NEW PRODUCTS ENGINEERING DEPARTMENT
BAKELITE COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION

Snug-fitting closures for drug and pharmaceutical containers very often determine the useful life of the contents. The use of polyethylene snap-on caps provides an air-tight, moisture-proof seal and eliminates the need for threaded containers.

The pharmaceutical industry and the plastics industry have much in common. They rank among the fastest growing industries in America; both expend a sizable percentage of their sales dollar for the research and development of new products.

The real worth of this inter-industry relationship emerges from the service provided by the plastics industry for the handling of pharmaceuticals. Of the two types of plastics to be discussed here, phenolics is by far the older, being commercially available for almost half a century. On the other hand, polyethylene—for industrial and commercial use—is still a youngster only ten years of age. Both, however, are quite well known.

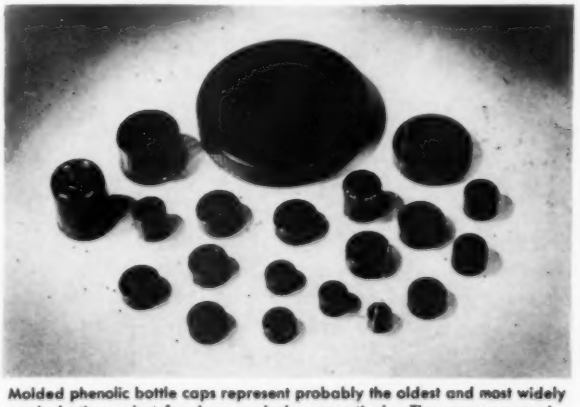
The molded bottle cap represents probably the oldest and most widely used plastic product for pharmaceuticals. The annual use of millions of these molded caps attests not only to the fine protection against contamination that they provide but also to the durability of the plastic. Pharmaceutical houses, laboratories, and hospitals are equally aware of the serviceability of phenolic resin products in connection with various instruments, equipment, and mechanical devices that are in daily use.

In addition to the numerous closures used, plastic jar-type containers represent a quite successful method of storing certain types of chemicals. The packaging of calcium hypochlorite affords a typical example. An ingenious thread design has been incorporated into this all-plastic phenolic container to permit proper breathing of the jar, thus, equalizing the internal gas pressure that develops during storage.

Where sterilization is required, it is recommended that the type of plastic product should be one specifically developed for that purpose. Mineral filled phenolic molding compounds are preferred where there will be repetitive sterilization. However, a newly developed and commercially available compound has had favorable acceptance over previously established products. Reports indicate that physical properties are maintained and overall appearances unimpaired during repeated steam sterilization.

Another type of phenolic resin—this time a liquid—performs an unheralded but important job for the pharmaceutical industry. Used as the basic ingredient in protective coating formulations, these plastic resins impart their inherent chemical-resistant characteristics to form a fine protective medium for the interiors of manufacturing equipment. One such instance involves the use of these phenolic resin-base coatings on the interiors of large vessels used for the production of antibiotics. Thus, a chemical resistant plastic barrier protects the highly purified drug components from possible contamination by the walls of the reaction vessel.

To return to phenolics as a material for packaging, a comparatively new application has been developed for safe shipment of necessarily fragile articles manu-



Molded phenolic bottle caps represent probably the oldest and most widely used plastic product for drugs and pharmaceuticals. They may assume innumerable sizes and shapes with varying surface appearances to suit the requirements of the user.

*Paper delivered before Drug & Pharmaceutical Committee of the Packaging Institute, June 17, 1955. Rewritten for submittal to Drug & Cosmetic Industry.

Rx... SANITARY SEAL your products with Du Pont **CEL-O-SEAL** bands

REG. U. S. PAT. OFF.

Laboratory-sealed products reach the druggist and the consumer exactly as prepared. A tamperproof CEL-O-SEAL band guarantees quality and purity, prevents losses due to lid back-off.

Quality control and uniformity of contents are maintained at all times. Du Pont CEL-O-SEAL holds primary closure secure, assures true measure. Consumer confidence is inspired in a product "topped off" with an attractive CEL-O-SEAL band.

Eye-catching individualized CEL-O-SEAL complements your product, gives you a standout package on the shelf, establishes family identification for your entire line of products. Brand name, sales messages, and suggested uses are effectively carried right to the point of sale.

Decorative and functional, Du Pont CEL-O-SEAL bands are also ideal for specialty items, bundling deals, unusual closure problems on odd-size containers. Bands can be an attractive label or secondary closure—or both. They may be hand- or machine applied.

FREE PACKAGING SERVICE: See what CEL-O-SEAL can do for your product. Send us a labeled container. Our packaging specialists will band it, make recommendations, return it for your inspection. No obligation, of course. Write "CEL-O-SEAL" Section, E. I. du Pont de Nemours & Co. (Inc.), 10424-I Nemours Bldg., Wilmington 98, Delaware.

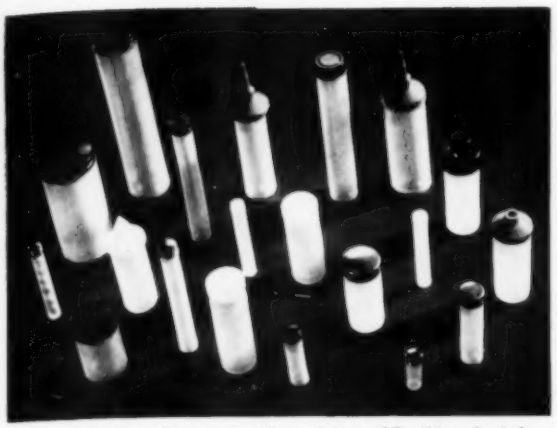
"CEL-O-SEAL" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa.

DU PONT
REG. U. S. PAT. OFF.

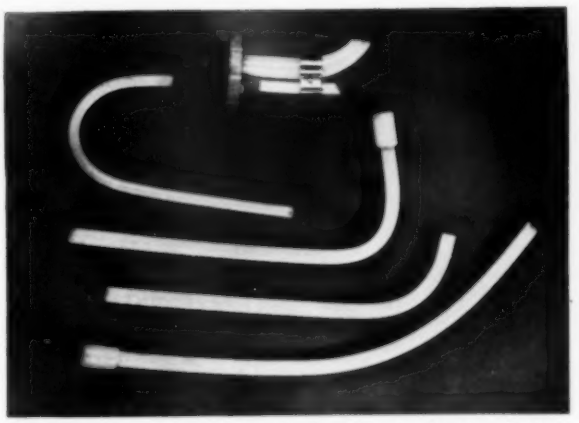
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT CEL-O-SEAL BANDS

REG. U. S. PAT. OFF.



These are but a few of the many styles and sizes of flexible polyethylene bottles that have been produced for efficient and practical packaging.



Polyethylene tubing such as the samples shown here has found application in the construction of siphoning apparatus used in the transfer of drugs and pharmaceuticals.

factured by various drug and pharmaceutical companies. This material (see Table I for property data)

TABLE I
Phenolic Foam Vs. Conventional Packing Materials

	DENSITY	COMPRESSIVE STRENGTH LB./SQ. IN. AT 10 PER CENT DEFORMATION
Phenolic Foam	1/3 lb./cu. ft.	0.8 to 1.2
Shredded Paper	2 to 3½ lb./cu. ft.	0.4 to 0.6
Excelsior	2 to 3½ lb./cu. ft.	0.4 to 0.6

is a low density, cellular foam that may be produced on the spot in a carton or other equally rigid packaging container. It may also be manufactured in the form of blocks or slabs which may be cut later to the size of such a container. For packaging, delicate articles are merely pressed into the mass and rest suspended in a cushion of phenolic foam.

If the medical and dental professions were to be considered here because of their close alliance with the pharmaceutical industry, numerous additional phenolic plastic applications could be cited. Such a list would include large molded housings for x-ray units, syringe attachments, instrument cases, and tube bases and other electrical components on much of the scientific equipment employed. However, these are mentioned only in passing, and consideration will now be given to polyethylene, the second major plastic material used by the drug and pharmaceutical industry.

In the short span of ten years polyethylene has become one of the most widely used plastic materials with possibly the broadest range of applications. As such, it is apt to be seen in many places, sometimes rather obscurely, because it has become a part of everyday living. Rarely, if ever, does the housewife think of the remarkable story behind the soft pleasant feeling film or flexible container that protects her purchases of foodstuffs or household supplies. She undoubtedly feels more secure in the safeguarding of her personal items, medicinals, and cosmetics by this serviceable plastic. Infants may enjoy better health because of this plastic, and they do come in very close contact with polyethylene as more and more mothers switch to disposable polyethylene-coated paper or polyethylene-coated cloth diapers. Good packaging design almost automatically includes the use of polyethylene either as a film, molded container, or coated product, in recognition of the contribution it has made to the art of merchandising. Even the radar technician probably does not realize the full potential of this flexible plastic that did so much to put radar operations on a practical basis.

Although polyethylene was discovered by English research technicians as early as 1933 and was used extensively for defense purposes during the second world war, its general introduction to the public in the form of consumer products was not forthcoming until 1946. For a while, the outstanding electrical properties and related physical properties overshadowed the advantages of polyethylene that were readily available to other industries. However, it was not long before product designers and industrial engineers came to realize that polyethylene with its chemical resistance, general durability, and lightweight provided avenues for expanding their specific fields of endeavor. A significant factor that contributed to the initial acceptance of polyethylene was its ability to be converted economically into unlimited forms by conventional molding and extrusion processes.

Polyethylene resin as it is produced by a plastic raw materials supplier such as Bakelite Company is a tough, flexible, translucent, milky white material. Commercially, such resin is usually marketed in the form of small pellets or granules. The conversion of gaseous ethylene to solid polyethylene in the original process combined the use of extremely high temperatures with tremendous pressures ranging from 30,000 to 35,000 pounds per square inch. The solidres in product is both crystalline and amorphous.

Polyethylene is essentially colorless and transparent in thin films. It has extreme flexibility at sub-zero temperatures with exceptional resistance to acids, alkalies, and most chemicals. It also has distinctive

(*Continued on page 572*)

If your product can be sprayed...

CONTINENTAL HAS AN AEROSOL CAN TAILOR-MADE FOR YOU

DOME TOP — Domes attached and equipped with standard 1" curled opening for all popular valves. Regular (12 oz.) or Midget (6 oz.).

CONCAVE TOP—Tops furnished loose and perforated with hole-punch for specified aerosol valves. Regular (12 oz.).

DOME TOP — Domes furnished loose and perforated with hole-punch for specified aerosol valves. Regular (12 oz.) or Midget (6 oz.).

More than 60 sprayable non-food products are now sold in Continental's three styles of aerosol cans. One of these containers will fit the exact needs of your product too. As part of Continental's Tailor-Made Package Service, we provide on-the-dot deliveries of all the cans you can use. Individualized engineering and master lithography are available... and so are contacts with valve suppliers and commercial fillers. It'll be a pleasure to advise you in any phase of your packaging operations. Why not call Continental at your convenience?

CONTINENTAL CAN COMPANY

Eastern Div.: 100 E. 42nd St., New York 17
Central Div.: 135 So. La Salle St., Chicago 3
Pacific Div.: Russ Building, San Francisco 4

Pacquins' NEW DESIGN

by Frank S. Child

Left to right, new package designs of Anti-Detergent Hand Cream and Hand Creams For Lovely Hands and For Extra Dry Skin.

Pacquins, Inc., has repackaged its hand cream line in a move to give the containers a more feminine and graceful appearance and to make them more appealing to the cosmetic shopper. In itself, this is not a startling development, for package redesign is commonplace today among cosmetic manufacturers; however, there is an extremely interesting side to this story.

Here is a hand cream, a mass product, which appears on cosmetic counters throughout the country and sells at popular prices ranging from 25 to 98 cents. The creams (there are three types) are highly advertized nationally; they are every-day products, not gift items. This is the first time in the history of the 20-year-old Pacquins hand cream that its package design has been changed.

Competition did not dictate this improvement, because the product had a good sales record beforehand. Nor does the company claim that sales have jumped because of the modernization. Pacquins thought it was time to redesign the original hand cream bottle in order to make it look more like a cosmetic container and keep abreast of the times.

Before deciding on the new-style container, Lippincott & Margulies Inc., designers, made exhaustive consumer tests to find out what color labels and caps, and what shape of bottle, would be most desirable. They decided the bottles should have rounded shoulders to make a softer profile instead of the angular predecessor. They changed the cap from purple to all white, thereby softening the appearance of the entire package, at the same time adding a feeling of quality. And, incidentally, the white cap makes the bottle look larger because of the uniform color of the entire package.

By switching to a double-shell closure, the designers covered up the thread in the cap with a smooth surface, adding an elegant note.

The greatest change appeared in the label which is now easier to read and more visible. There is a different color scheme for each of the three creams. The regular hand cream label is purple, gold and white; the Cream for Extra Dry Skin, red, gold and white; and the Anti-Detergent hand cream, blue, gold and white. In each case, the identifying color is restricted to the upper half of the label in which the name Pacquins appears by itself.

The bottom of each label is gold and is separated from the top portion by a crescent of white on which there is the inscription, "Hand Cream," in purple or red, to tie in with the rest of the design, or "Anti-Detergent," in blue.

The gold was added to the label so it would help blend the deeper colors, purple, red and blue, into the white of the background. The gold acts as an intermediate shade which ties the label to the white jar.

An orchid design appears above the company name on the label, and again on the cap, always in gold. This added touch serves the purpose of imparting a feeling of elegance and luxury to the product.

The completed package is now harmonious with other cosmetic items on a dressing table and blends in with the grace and femininity of the perfume and cologne bottle. Arranged together in a mass display on the retail counter, the Pacquin bottles present a powerful and attractive attention-getter that was not as readily possible with the former, heavier design.

This is not to detract from the power of the original Pacquin bottle by any means, for Pacquins was the very first hand cream to be nationally advertised and distributed in the United States. It was originally developed for dentists and was sold through dental supply houses—and for doctors and nurses "who have

(Continued on page 57?)

Comparison of new design with the old. Note more legible labels, white, double-shell caps and improved logotype.

HOW TO STAR YOUR PRODUCTS AS AEROSOLS

These Contract To The

Even slow-moving products have been reborn as best sellers when packaged as aerosols. The push-button convenience of modern pressure packaging, and its elimination of loss from evaporation, spillage, and breakage have proved tremendous sales advantages. With production of aerosols now approaching 200,000,000 units yearly, a gain of nearly 4000% in ten years, it's time for even the conservatively minded to start using this appealing new packaging technique.

Not a Cent Is Needed for Special Equipment or Personnel!

Nothing in merchandising could be simpler than giving your products the sales advantages of aerosol packaging. If they can be sprayed, brushed on, dusted or daubed, see any of the Contract Fillers listed here. They have the facilities and skills to take over the entire packaging job—whether you want a small test run or volume production. You won't have to invest a penny in plant or personnel.

Specialization by the Contract Filler makes possible economies you might need months or years to achieve. He has the accumulated experience to guide you in obtaining the right containers, valves and formulations. Call on his help now . . . he is your short-cut to the booming aerosol market.

The Finest Aerosols are Made with

genetron®

Aerosol Propellants

A propellant for every need

Scores of different types of products have been successfully packaged and merchandised as aerosols with the use of General Chemical's *Genetron* Propellants. They are used alone or in combination to provide the ideal propellant for every aerosol need, every pressure and compatibility requirement, every type of container. *Genetrons* include:

GENETRON 12—Dichlorodifluoromethane
GENETRON 11—Trichloromonofluoromethane
GENETRON 12/11 MIXES
GENETRON 320—Dichlorotetrafluoroethane
GENETRON 320/12 MIXES
GENETRON 101—Monochlorodifluoroethane
GENETRON 320/101 MIXES
GENETRON 226—Trichlorotrifluoroethane
GENETRON 141—Monochlorodifluoromethane
GENETRON 100—Difluoroethane (1-1)
SPECIAL PROPELLANTS

GENETRON DEPARTMENT
GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

For further information, send for our illustrated technical manual and market data book . . . **"ALL ABOUT AEROSOLS"**

Allied Chemical

Basic Chemicals For American Industry

Fillers Are Your Short-Cut To The Rich Aerosol Market!

Contract Fillers

The Contract Fillers listed are equipped to fill aerosols with *Genetron* Propellants and are believed thoroughly qualified. Care has been taken to make the list complete, but there may be others in your area who can serve you equally well.

Aero-Fil, Inc.
10015 West Pacific Ave.
Franklin Park, Ill.

Aeropak, Inc.
3001 West 47th St.
Chicago 32, Ill.

Aerosol Corporation of the South
203 Scott St.
Memphis, Tenn.

Aerosol Methods
Johnson Road
Morristown, Pa.

Aerosol Co., Inc.
525 North 11th St.
Neodesha, Kansas

A-M-R Chemical Co., Inc.
985 East 35th St.
Brooklyn, N. Y.

Armstrong Laboratories
421 La Grange St.
Boston 32, Mass.

Associated Brands Inc.
35 Claver Place
Brooklyn 16, N. Y.

C. Barr & Co.
3601 South Racine Ave.
Chicago, Ill.

Bridgeport Brass Co.
East Main St. & Crescent Ave.
Bridgeport, Conn.

Cardel Enterprises
Bethridge Road—Rexdale
Toronto, Ontario

Chase Products Co.
20th & Gardner Road
Broadview, Ill.

Chemi-Form Corp.
1631 South Michigan Ave.
Chicago 16, Ill.

Cleveland Aerosol Packaging Corp.
425 Lakeside Ave., N.W.
Cleveland 13, Ohio

Connecticut General Research Corp.
706 Bostwick Ave.
Bridgeport, Conn.

Connecticut Chemicals (Canada) Ltd.
Curity Ave. and Hollinger Road
Toronto, Ontario

Continental Filling Corp.
123 North Hazel St.
Danville, Ill.

Edgerton & Riley, Inc.
Muirkirk, Md.

Eveready Pressurized Products, Inc.
1022 Belt Line St.
Cleveland, Ohio

Fluid Chemicals Co., Inc.
878 Mt. Prospect Ave.
Newark, N. J.

Robert J. Kerr Chemicals, Inc.
9 South Fairview Ave.
Park Ridge, Ill.

LaMaur Products, Inc.
520 Plymouth Bldg.
Minneapolis, Minn.

Lawson Chemical Products Co.
5634 Selmarine Drive
Culver City, Calif.

Lenk Manufacturing Co.
30 Cummington St.
Boston,Mass.

McGuire & Co.
833 47th Ave.
Oakland, Calif.

National Aerosol Packaging Corp.
330 S. Wells Ave.
Chicago, Ill.

National Spray Can Filling Corp.
1238 East 14th St.
Brooklyn, N. Y.

New Jersey Aerosol Packaging Co.
108 Ashland Ave.
West Orange, N. J.

Par Industries, Inc.
2193 East 14th St.
Los Angeles, Calif.

Plaze, Inc.
9401 Watson Industrial Park
St. Louis, Mo.

Powr-Matic, Inc.
Stroudsburg, Pa.

Powr-Pak, Inc.
643 North Ave.
Bridgeport, Conn.

Products Manufacturing Corp.
135 Stevens Ave.
Little Falls, N. J.

Puritan Distributing Co.
160 Washington St., North
Boston 14, Mass.

Regal Chemical Corp.
115 Dobbin St.
Brooklyn 22, N. Y.

Gene Rose Co., Inc.
1637 South Kilbourne Ave.
Chicago, Ill.

Schaefer Paint Company
334 West Marion St.
Lancaster, Penn.

Sprayon Products Co.
2075 East 65th St.
Cleveland, Ohio

Stalfort Pressure-Pak, Inc.
319 West Pratt St.
Baltimore, Md.

John Struthers & Co., Ltd.
3081 Ontario St., East
Montreal, Quebec

Sun-Lac, Inc.
725 Fairfield Ave.
Kenilworth, N. J.

Transco Co.
728 Chronicle Bldg.
Houston 2, Texas

Whitmire Research
Laboratories, Inc.
339 So. Vandeventer St.
St. Louis, Mo.

Western Filling Corp.
4151 Bandini Blvd.
Los Angeles, Calif.

Zenith Drug Co.
1 Vesey St.
Newark, N. J.

Zonite Products Corp.
500 Jersey Ave.
New Brunswick, N. J.

Packaging and Selling

All About Whiskers

The Gillette Company was founded on an inspiration. According to the company's publicity and public relations advisers, King C. Gillette started on an epic venture one bright sunny morning in Brookline, Massachusetts. Following his custom, Mr. Gillette 40, handsome and with a full mustache, removed his ancient straight razor from its leather case and started to scrape at his whiskers. On this particular morning, his razor made little headway.

"It was not only dull," he recalled some years later, "but it was beyond the point of successful stropping and it needed honing, for which it must be taken to a barber or a cutler."

"Gillette muttered and mumbled at the useless edge of his shaving instrument that morning in Brookline. Then, suddenly, as it comes to few men, inspiration swooped into the mind of King C. Gillette."

"I saw it all in a moment, and in that same moment many unvoiced questions were asked and answered more with the rapidity of a dream than by the sole process of reasoning."

Today, the Gillette Company is apparently not taking any chances on one of their executives having an inspiration swoop into his mind. With the introduction of three new models of razors for the three basic types of whisker, Gillette admits that this new product is a result of years of intensive research.

With these new razors, the Gillette Company have released some very interesting facts about our facial foliage.

You can forget the old superstition that shaving tends to increase hair growth and coarseness. Facial hairs, whether you shave or not, coarsen very slightly in a process that continues all your life.

Excepting bald men, the beards of most males are about three times as thick as the hair on the head. Beard hairs grow closely together on the chin and under the nose, where they grow as heavily as 700 to 800 per square inch. Of course, there are some variations here.

Gillette's researches have determined that the average beard grows about one-half an inch per month or .017 of an inch per day.

In spite of years of research, Gillette confesses that they can find no better softening agent for shaving than plain water. While lather does not help soften the beard, it does contribute to pleasant wet shaves by holding the water around the beard and thoroughly soaking it, preventing evaporation of the water, and by lubricating the glide of the razor.

A beard can absorb 35 per cent of its own weight in water. This is lucky for men because in their dry state, whiskers are about as tough as copper wire of the same dimension.

Human hair does not grow straight out. It grows at an angle of less than 90 degrees from the skin—a vestige of the days when it was a thick overlapping mat sheltering skin of primitive men. With most men, hair grows in a downward direction from the temples to the chin, but it may grow sideways or even in circular whorls. It all depends upon the particular male. When a beard has been thoroughly soaked in water, its diameter swells up about 12 to 15 per cent and becomes stretchy and soft, making it easy for a sharp blade to slice through the stubble. That softening process is speeded up with hot water. It takes about three times as long for hair to achieve maximum softness in water of 70° F. as in water of 105°.

Packaging Means Automation

According to studies made by the Folded Paper Box Association, food store sales per clerk have jumped from $6,865.00 to $28,530 in the last 15 years.

A. E. Murphy, Executive Director of the Association, thinks that packaging has a great deal to do with this increase. As packaging continues to stimulate sales and cut distribution costs, he said manufacturers will lean more heavily on packaging as a selling tool. More and more products that have been displayed loose in the past are being packaged, and this trend will continue.

Nobody can deny that packaging made possible the prepared foods which largely account for this increase in sales. Or should we say that food research developing prepared food made equal technical development in packaging necessary.

It would seem possible from the packaging viewpoint to arrive at the conception that packaging will ultimately eliminate practically all personnel at the point of sale and that what we are really striving for is complete automation in the transfer of merchandise from the manufacturer to the consumer.

The Sponsored Brand

The super-market chain which has been most prominently in the news during the last several months has been the Safeway Stores. This progressive retailer has been actively in front in trying to find a solution for the very serious problem of over promotions and over couponing which has harassed particularly the food industry as well as our own industry. Now the Safeway Stores, in their annual report, brings to the forefront again the question of the retail private label which languished and seriously declined during the War and the post War years. Safeway calls their 210 different private label products "Safeway sponsored brands."

They state the purpose of sponsored brands is to increase sales and profits. "One reason we can do this is because with Sponsored Brands we are buying commodities instead of brands and we have a better con-

Styled for Sales
Stocked for Service

Pack to attract in Maryland Glass

Gleaming, crystal-clear bottles in many eye-catching designs—that's Maryland Glass styling! (Or, if you prefer, we will design a distinctive shape for your use.) And these Maryland Glass bottles are *practical*... sturdily constructed to fill and pack easily, keep breakage to a minimum.

Stocked for service? We have a complete range of sizes in all styles, ready to fill your order immediately. Tell us about your product in the coupon below and we'll send prices and samples. No obligation, of course.

Mail this coupon for details, prices and samples ⟶

MARYLAND GLASS CORPORATION
2147-53 Wicomico Street
Baltimore 30, Maryland

Gentlemen:

We pack..... in .....
(type of product) (size or sizes)

Please send us appropriate samples and prices in clear glass bottles.

Name .....

Company .....

Address .....

City .....Zone .....State .....

Plastic Bottles *by Continental*

are designed to appeal

Whether your product is sprayed, sprinkled or poured . . . or whether you sell convenient plastic containers directly to the consumer, it will pay you to investigate Continental plastic bottles. They're unbreakable . . . can be squeezable if you like. They can be made in most any shape and size. As for colors — the rainbow's the limit.

It may be that you'll find just what you need among Continental's stock sizes and shapes. In any case, you'll find that Continental research and engineering people, and designers, too, have a lot of new ideas for increasing appeal with plastic bottles. Why not let them help you?

CONTINENTAL CAN COMPANY

Our Fiftieth Year of Tailor-Made Packaging

MILLSPLASTIC DIVISION

135 SOUTH LA SALLE STREET • CHICAGO 3, ILLINOIS

trol over the price we pay. For instance, we sell sponsored brand soap, but we buy the fats and oils that go into it. We buy them in a free market where we have equal bargaining rights and can establish a right first cost. This permits us to earn a fair profit on the finished product."

When the selling of national brands reach the point where they go television crazy and spend 30 to 40 per cent of sales on advertising, and where, because of fair trade, the price of the retail product is marked up to sustain a 40 per cent discount when all a supermarket needs is 20 per cent, and when a lot of other uneconomic distribution costs enter into a manufacturer's pricing, then there is little wonder that the retail private label becomes increasingly attractive to the very competent merchandisers in the retail trade.

Tie-In Advertising

There have been quite a few related advertising campaigns in the last few years. There seems to be many logical reasons for this method, not only from the viewpoint of making the advertising dollars go much farther but from the viewpoint of increased reader interest and increased point of sale promotion value. One of the most successful recently was a four-way cooperation including Princeton Knitting Mills, Bendix Washers and Dryers, "All" Detergent and a series of different garment manufacturers.

There have been some of these associated tie-in advertising campaigns for this industry. It would seem that the two basic and potent appeals to consumer motivation on which this industry rests, that is either health or beauty, would make the leading brands of this industry a much sought-after participant in many variations of related advertising.

Better Shipping Cases

The shipping case has not received anywhere near the attention in the packaging industry that it deserves. It is true that a great deal of research has been carried on for some years by the leading shipping case companies but the response from manufacturers and from retailer has been lukewarm as compared to the excitement and enthusiasm which had been devoted toward the package for the product.

Today a number of factors are making it necessary for manufacturers to give more serious thought to their shipping container. The retailer today is overwhelmed with a multiplicity of brands and products for which he has a decreasing amount of room, either on his shelves or in his receiving department. The retailer is also facing increased cost of labor, decreasing efficiency of labor and a growing tendency of the public to spend less time per transaction in purchasing.

Automation will probably find one of its most fertile fields in distribution.

In spite of the increasing problems found at the retail levels in handling packaged goods, too many manufacturers are handling their shipping containers as if no problem existed. For instance, some time ago, a leading food chain called for smaller packing cases for slow turnover items. He stated that this would mean that these cases would not have to be handled so often, that they would be more easily opened which would cut down on the work of clerks and also eliminate a high percentage of damage to the product.

This executive stated that in a recent experiment 400 cases picked at random were opened at the top and in only 59 per cent of the cases were the contents right side up, in the proper position for marketing. In the case of the 41 per cent of the items that were wrong side up this required removing each item and marking it individually, a slow and costly procedure for store labor.

One leading food company, Maxwell House, has recently completely redesigned their shipping containers so as to cut labor costs through quick, positive identification of the various coffee grinds.

The company has color coded the cases with color denoting the different grinds of their vacuum-packed coffee.

These new cases carry a full description on the top, bottom and all sides and also carries copy telling grocery clerks which side to open for price marking purposes.

Cosmetics to Pharmaceuticals

A few issues ago, we commented on the entry of Max Factor into the pharmaceutical industry. Now it looks as if this may be a trend, because in a recent issue of the AMA Archives of Dermatology, we notice an advertisement of the Revlon Pharmaceutical Division.

We don't know how much of a trend this is, but at least it is extremely interesting to us to see these two leading cosmetic companies establish a pharmaceutical division. This is partly because for many long years a number of pharmaceutical companies have had large and sometimes prosperous cosmetic divisions. In fact many of the leaders in the cosmetic business are either associated with, or a direct part of, or are subsidiaries of drug companies.

It is interesting to speculate as to the reason for this cosmetic entry into pharmaceutical products. For one thing, experience has shown that there is a very definite ceiling on the volume of business that a cosmetic company selling through retailers can do. The ceiling is relatively small, from the viewpoint of American industry. When it begins to pass 20 million dollars in gross sales normally that company is entering into a period of frenzied pressure to maintain that volume. Therefore any broad expansion in sales which a company of this sort might want may well have to come from other fields.

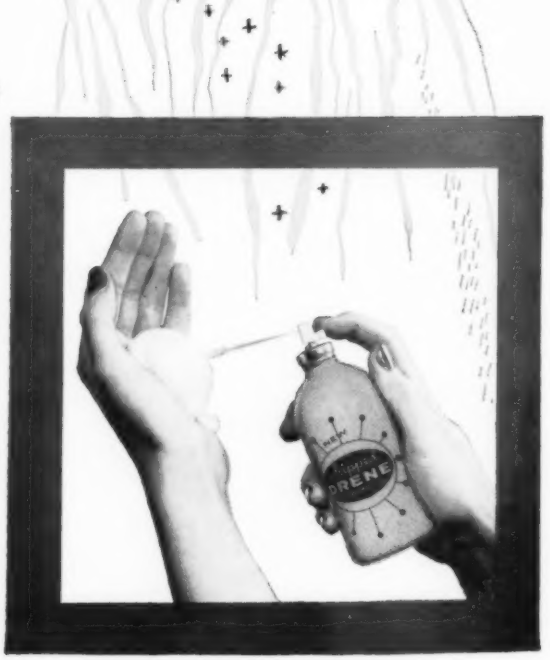
Cosmetic companies, or at least a few of the large ones, have acquired the belief that they have a technique or a know-how as applied to advertising and the promotion of packaged goods that could well be applied to a larger field. This may be true of certain proprietaries. It is certainly true that tooth paste for instance, which may be classified as a toilet article has, nevertheless been subject to this advertising formula since it began to use therapeutic claims.

The cosmetic industry is notoriously weak on research. In fact, about 98 per cent of the new products of this

Magnetic MERCHANDISING

. . . for Whipped Drene Shampoo and your product, too!

In this suave push-button bottle, filled by Continental, lies the essence of magnetic merchandising for Procter & Gamble's new Whipped Drene Shampoo. Push-button containers invite immediate attention and examination . . . assure universal sales appeal. If now marketed in liquid form, *your product may gain new sales appeal* and value when packaged á la aerosol . . . in pressurized containers. And you need not invest a penny in equipment or personnel, for we can take care of all filling, storing and shipping. Write for information . . . *now!*



CONTRACT AND CUSTOM FILLING

LIQUID SPRAY FOAM

MAIN OFFICE • 123 NORTH HAZEL STREET, DANVILLE, ILLINOIS

CONTINENTAL FILLING CORPORATION

PLANTS • DANVILLE, ILLINOIS — HOBART, INDIANA

industry have evolved through the research of the supply industry. This has been true in the chemical character of the product as well as in packaging and production. Nevertheless, the cosmetic industry has a flair in compounding and an alertness in this sort of work that may have some value in certain types of drug products. For instance, in this Revlon product called Silicare it is specified as "a combination of Silicone and hexachlorophene in a specially prepared base."

Fabric Specialties

The Chase Bag Company is entering the specialty and premium field in a variety of items made from cotton, textiles, rayon, burlap, plastic film and paper.

This Wonderful County

The Weirton Steel Co. has joined a promotion with the Can Manufacturers Institute and will launch a large advertising campaign featuring the new recipe for "Colonial Corn Pie" created for the occasion by Poppy Cannon, the Food Editor of House Beautiful.

D.E.W. Druggist

Up in the Northwest tip of Canada, snugly very close to Alaska, and perched on the Great Slave Lake, is a drugstore with some unusual problems. This druggist is located in Yellowknife, perched right on the edge of the D. E. W. line, that is the joint U. S.-Canada radar network for "Distant Early Warning" and also right in the middle of a thriving development of mineral wealth.

The 3,000 people of this coming metropolis give this druggist the highest average sales for any drugstore in all Canada. The average sale at Yellowknife is $1.50, whereas the average sale of all Canada is $.50. Another Arctic problem is that at the time of the final cargo before freezing sets in this druggist has an inventory exceeding $60,000.

Promote Make-Up

Manufacturers of women's full-fashioned hosiery have pledged $150,000 toward an advertising and promotion fund to fight bare legs.

This looks like a direct assault on the cosmetic industry. It should be a clarion call to the cosmetic industry to gather at least an equal sum for promoting leg make-up.

Still Building

The Caswell-Massey Company in New York is reputed to be the oldest apothecary shop in the country. This company celebrated its Two Hundredth Anniversary some three years ago. Ralph Taylor, who became owner of this company in 1937 started work for Caswell-Massey as a boy running errands and washing bottles.

In addition to its retail business, Caswell-Massey now manufactures over 250 branded products under its own label.

"In Stocks" Essential for Sale

Retail surveys are making it increasingly clear that one of the critical problems in distribution today is the degree of "in stock" merchandise among the stores supposedly selling manufacturers goods.

Recently, women leaving a super-market were asked whether they had completed all purchases intended when they entered the store. Many of these women admitted that the store had been out of their favorite brand. But few said that they had refused to buy an alternate brand. They accepted the brand they liked or knew second best or even third best. It was very clear in these interviews that women will not go out of their way looking for a preferred brand.

What It Takes to Sell

Here are some words from the President of the Grocery Manufacturers of America which just about sums up the problems of any manufacturer of packaged products. This GMA President emphasized the major importance of advertising, packaging and merchandising in promoting a new product. He said "Advertising by manufacturers and retailers excites interest and presells the shopper on the product and the brand. But this effort is lessened if something does not happen in the store to bring the merchandise strikingly to the customer's attention and move her to put it in her basket. This, of course, puts a high premium on good packages with that 'come-hither-pick-me-up-add-take-me-home' look, which will make the shopper notice the item, remember its advertising advantages and buy it. If a good package is coupled with an excellent new product, well advertised, properly displayed and adequately stocked, sales quotas will be multiplied."

Retailers Still Important

"Automatic repeat buying of the same brand is infrequent regardless of previous experience."

Only one person in five remember seeing advertisements about the product they bought and two-thirds of all durable goods buyers could not recall seeing any advertising or reading anything about the item they purchased." These are findings in a study made by the Survey Research Center at the University of Michigan. It does look as if the retailer still had something to say in the way of distribution and in the completion of the sale.

Fancy Packages

This Christmas will apparently see almost everybody in the liquor business with a fancy liquor decanter as a sales stimulant. These fancy containers undoubtedly offered a substantial competitive advantage to the early pioneers. We haven't seen any figures to

LOOK AT THE FLOOR...

for proof this cap saves you money

Operate your line for a few hours with Armstrong Hi-Tork® Caps. Then inspect the floor. You'll be pleasantly surprised at how clean it is. The broken cap pieces usually found around high-speed lines are conspicuously absent.

The reason? The extra strength of Hi-Torks. These caps are designed so that each element—dome, thread, and skirt—takes exactly its share of stress. So Hi-Tork Caps pay off for you through less breakage, and this very quickly adds up to important savings.

A test run will show you that you can cash in on the extra strength of Hi-Torks. We'll be glad to help set it up. Just pick up the phone and call your nearest Armstrong man. Or write direct to Armstrong Cork Company, Glass and Closure Division, 5310 Chambers Street, Lancaster, Pennsylvania.

Armstrong "HI-TORK" MOLDED CAPS

show whether they increased total liquor purchases. Now that everyone has a decanter, thus neutralizing the competition within the liquor industry, it will be interesting to see whether the distillers have actually increased the sale of liquor or whether they have simply added a new overhead without any plus in sales. This is a dilemma that the perfume people have been concerned over for the last several years.

High Cost Distribution

Grocery stores today carry as many as seven thousand different items on their shelves compared with about 1,000 in 1939, according to the Administrative vice-president of the Grocery Manufacturers of America. Grocers are now complaining that they already have too many products and that they do not have rubber walls. This is a pretty terse explanation of the high and increasing cost of securing distribution of a new product today.

Ad-Format Package

Not too long ago most manufacturers were very fearful of changing their package in the slightest because they believed that many of their established customers would not identify properly their product or would be fearful of its authenticity. Now, according to J. C. Newell, Jr., of the Folding Paper Box Association, the Annual Carton Contest of this association provides many examples of companies that regularly change their packages to conform to new advertising ideas. In other words, these folks apparently think that the consumer today more readily identifies the package if it is intimately associated with the current advertising theme.

Mr. Newell lists four ways in which the ad-format package can be most successfully achieved.

1. By the liberal use of illustrations clarifying the use of the product and related to similar illustrations in the company ads.
2. Development of a design to establish shelf identification and trade-mark recognition for the product.
3. Explanatory sketches with human interest appeal showing the product in use.
4. The wide use of color especially when color is used in the advertising.

Green Steaks

How would you like a green steak? Or, we might add, purple potatoes and red peas? Or a pink bread spread with green butter? These are questions asked by Dodge & Olcott in a four-color feature story describing the psychological implications of color in food products, published in the September 11th issue of Parade Magazine's Sunday Supplement. The article was written by the editors of Parade Magazine, with the aid of Dr. Joseph L. Konig of Columbia University and the Dodge & Olcott Flavor Laboratories.

Whatever you may think of blue potatoes and a green steak on first thought, it must be admitted that color has brought a complete revolution in marketing to such things as household utilities, the automobile business and very much so to the cosmetic business. So why not food?

As has often been said in social science, that which is a revolution today is accepted as commonplace tomorrow. So maybe before too many years, we will be rejecting a sirloin unless it has just the right particular shade that will identify a high quality in our mind.

Why Food in Food Stores

There is cause to wonder why grocery super markets continue to bother with food products. We say this because there seems to be a growing flood of publicity and propaganda from super-market sources regarding the advantages and the extra profits of non-food products.

A few weeks ago, there was a super market non-food exhibit opened in the Biltmore Hotel, New York. Reports are that there was a great deal of interest in this exhibit and that super-market operators were very much intrigued at the profits which could be made in other industries where manufacturers' discounts are geared up to, and fair trade supported, for the operation of what the super retailers consider inefficient retailing.

Vacation Cosmetics

Purchasers of toiletries, cosmetics and perfumes by upper income families for their vacation amounted to $10,562,000. This is according to a nation-wide travel survey by the Research Department of Curtis Publishing Co.

Out of the nearly $600,000,000 spent by upper income vacationers for consumer goods, toiletries, cosmetics and perfumes rank in expenditures with still cameras and film for movie cameras.

Chances for Growth

Abbott Laboratories is starting the first consumer advertising campaign in its 67 years of pharmaceutical manufacturing. This advertising, which will appear in several consumer magazines, and a heavy list of trade and professional magazines, will feature the non-caloric sweetner Sucaryl.

When Abbott announced Improved Sucaryl in August, plastic jewel boxes containing the new Sucaryl recipe book and stock packages of the Sucaryl Tablets liquid and powder, were distributed to 1500 food editors and program directors in the country.

This is one further step in the diversification of the pharmaceutical industry which has been progressing into such other fields as nutrition and the food industry, and in agriculture through animal and plant health. We have said many times before that we think the pharmaceutical industry, because of the direction and character of its chemical research and its ethical standing in the country, has one of the best opportunities for dynamic growth through diversification of any other industry in this country.

control's the thing...

WITH ANCHOR HOCKING, TOO

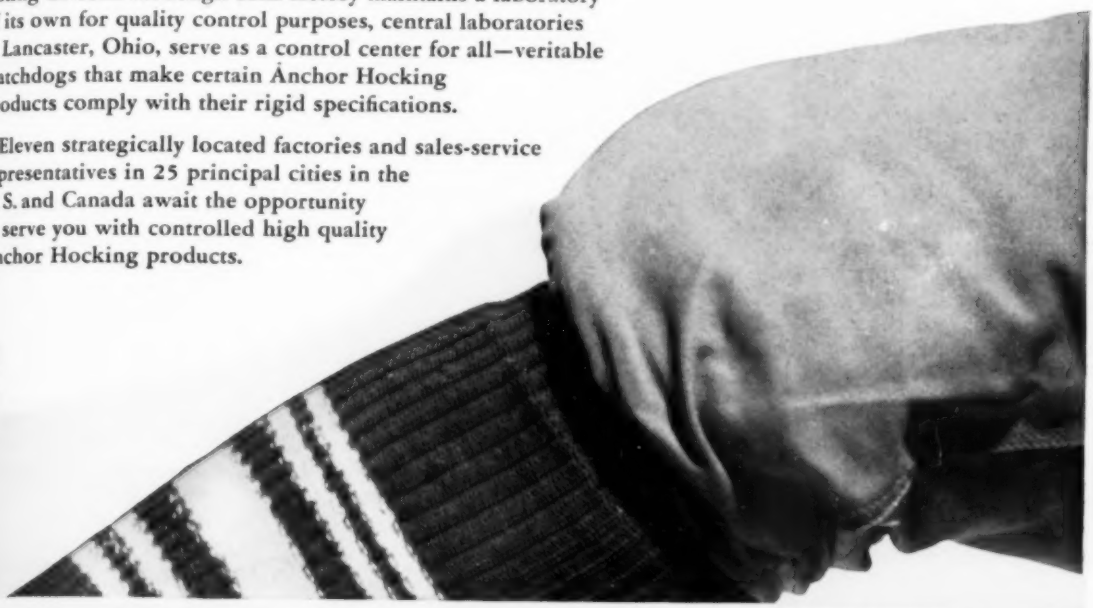
Anchorglass® Containers are uniformly strong, tough, dependable—high in chemical durability, accurate in dimensions, capacity and finish . . . a result of exacting quality controls.

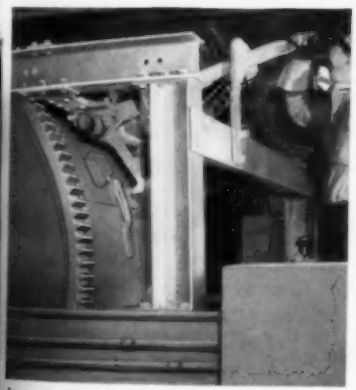
50th Anniversary

The dependable place-kicker needs cool nerves and perfect *control* to consistently make the point-after-touchdown or field goal. And *control* is important, too, in the manufacture of Anchor Hocking quality products.

From the selection of all raw materials to the final production line inspection, Anchor Hocking employs literally hundreds of exacting *controls,* tests and checks involving many scientific testing devices. Although each factory maintains a laboratory of its own for quality control purposes, central laboratories at Lancaster, Ohio, serve as a control center for all—veritable watchdogs that make certain Anchor Hocking products comply with their rigid specifications.

Eleven strategically located factories and sales-service representatives in 25 principal cities in the U. S. and Canada await the opportunity to serve you with controlled high quality Anchor Hocking products.





Accurate control of glass batch mixing is vital to good glass. Automatically controlled mixing drums time and properly mix each batch.

The composition of good glass is always homogeneous. Its control, through daily tests in density tubes, provides an accurate check of Anchorglass quality.

Bottles are regularly tested at sustained internal pressure to make certain that they comply with rigid Anchor Hocking quality standards.

ANCHOR HOCKING

GLASS CORPORATION

GENERAL OFFICES — LANCASTER, OHIO

Anchorglass Containers, Anchor Metal and Plastic Closures, Anchor Sealing Machines, Cartons and Package Engineering Service... for Packers, Manufacturers, Bottlers of Foods, Drugs, Household Chemicals, Cosmetics, Toiletries, Beverages, Beers, Ales, Wines and Liquors.

NEWS IN PACKAGING...

Symposium on Plastics

The Society of Plastics Engineers, Inc. will hold a one-day technical symposium on Plastics for Packaging on November 16 at the Hotel Statler, New York. It will include speakers from 11 major material suppliers who will talk on the different plastic materials used in the packaging field. Technical exhibits will be closely related to the discussion.

The meeting is open to all SPE members and any others who are interested. Registration is $2 for members and $3 for non-members.

Further information may be obtained from William Lewi, chairman, SPE Atlantic Region Conference, 37-01 Vernon Blvd., Long Island City, N. Y.

Aerosol Compatibility Tester

Fischer & Porter Co. has developed a new glass aerosol compatibility tester which may be adapted either to the laboratory or the production line. The glass container enables one to watch the test and see whether or not interaction takes place between the propellent and the contents of the aerosol bomb.

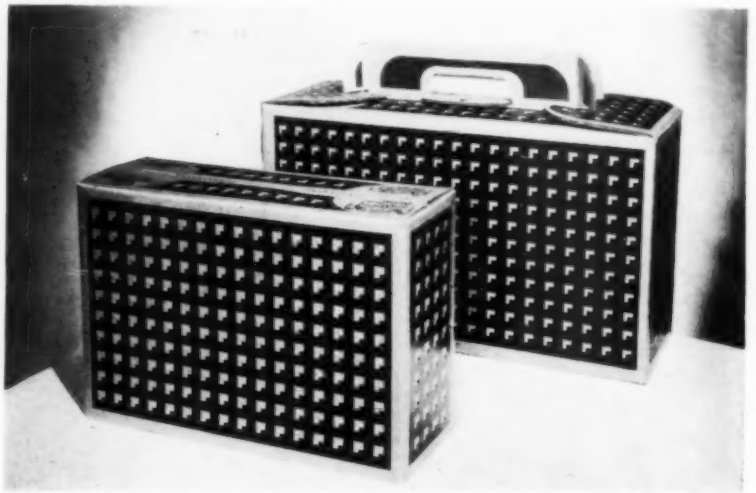
The tester may be used for spray and pressure characteristics as well as for compatibility. It may also be used over the entire pressure range common to the aerosol packaging industry, provided the usual precautions are taken for use of glass under pressure.

Glass aerosol compatibility tester developed by Fischer & Porter Co. which may be used either in the laboratory or production line.

Further information on the Aerosol Compatibility Tester is available from Fischer & Porter Co., Hatboro 35, Penna., on request.

Gair Smarty Pak

Robert Gair Co. is now manufacturing and selling Smarty Pak corrugated containers, which are combination shipping and carrying cases with handles. The firm acquired license rights from Edward E. Muhs of Berkeley, Calif., the inventor.



Robert Gair's Smarty Pak corrugated containers which can be used as shipping containers, mailers or carriers. Gair bought the license rights from the inventor, Edward E. Muhs, of California.

The Smarty Pak is a one-piece die-cut case which can be used as a shipping container, mailer or carrier. It can be converted from one to another with considerable ease because the flaps lock together without gluing. The surfaces of the case will take various printed designs, an important factor in dressing up the appearance of the Smarty Pak and using it as an advertising medium. Added to this is the possibility of customer re-use.

Linings for Plastic Bottles

Plax Corp. has developed linings for polyethylene bottles which coat the inside of the containers and eliminate collapse and outer-surface greasiness. The bottle-in-a-bottle effect of the linings also reduces the permeation of a variety of essential oils. Products that contain these oils will therefore retain taste and odor characteristics for practical shelf-life periods.

These linings are invisible to the eye, they do not change the appearance, feel or characteristics of the polyethylene container.

At the present time, Plax is applying the linings to round and simple-shape bottles with neck finishes of 18 mm. or larger, in capacities from one ounce up. The firm is working on more complex bottle shapes and other types of linings in order to arrive at a wider range of materials.

Glossary of Packaging Terms

The Packaging Institute is about to publish the Second Edition of the Glossary of Packaging Terms which will be available at the Seventeenth Annual Forum, Hotel Statler, New York, October 31, November 1 and 2.

This second edition contains about three times as many terms as the former glossary, it is a cloth-bound, hard cover, 6x9-inch book of more than 250 pages of definitions. The editorial content was carefully checked by Dr. L. V. Burton, formerly editor of Food Industries, and recently retired executive director of Packaging Institute.

Single copies will sell for $6.75, while quantity prices are $5 a copy for ten or more books and $5.95 each for five to nine books.

Polyethylene Booklet

The Bakelite Co., a division of Union Carbide & Carbon Corp., has published a new brochure entitled, "Here's How It Pays to Package in Film Made of Bakelite Polyethylene Plastic." This illustrated folder shows how poly-

she shall have

BEAUTY

wherever she goes

You can promise yourself more repeat sales when you package your compressed powder and rouge in *Scovill's patented refillable vanities.* Women return for refills time and time again. Why lose this profitable refill business? Talk to a Scovill representative about richer-looking, distinctive vanities styled to meet your requirements.

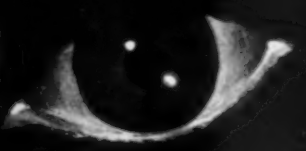
Scovill Manufacturing Co.,
Drug and Cosmetic Container Division,
63 Mill Street, Waterbury, Conn.

SCOVILL
Containers

she spends

$64 billion

a year!



After the rent, taxes, utilities, and other basic fixed expenditures are all taken care of, American women spend $64-billion on such discretionary items as soaps, cosmetics, perfumes, specialty food items and hard goods. In round figures, that's about 80 percent of all such items bought each year.

So you see, *she's* the one we have to sell. And to sell her, we have to give her what *she* likes.

So let's take your product—put it in a package that's lightweight, easy-to-use, beautiful in color and design—and she just can't resist. The sale is yours.

Imco containers can be made in any shape or color under the sun . . . either by special design, or from our wide range of attractive stock bottles. We invite you to talk with us about tailoring your package to her 64-billion-dollar taste.

IMCO CONTAINER CORPORATION

EMPIRE STATE BUILDING, RM. 6204
350 FIFTH AVE., NEW YORK, N. Y.

75TH AND CLEVELAND STREETS
KANSAS CITY 30, MISSOURI

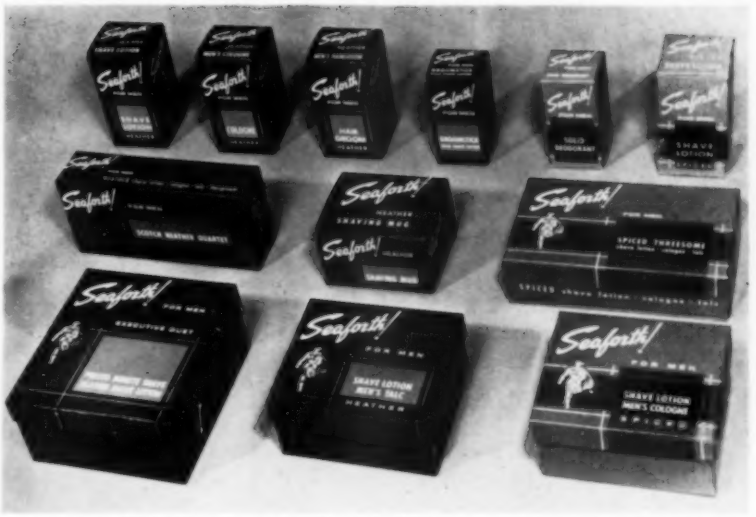
Our bottles bear this trademark FLEXCEL®

ethylene packaging has expanded markets for products in many fields, ranging from pills to clothing.

Copies of the brochure are available from the company at 30 East 42nd St., New York 17.

The Seaforth Family

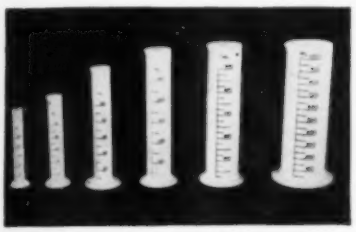
Seaforth now has an attractive family design for all of its men's toiletry packaging, replacing the former individual cartons. High points are a bolder, crisper logotype and fresher color values of red and green. The Highlander is shown against an abstract tartan especially designed for visibility and identification. The entire effect of the line is extremely pleasant to the eye and ties all the packages together in a distinct family unit that previously did not exist.



Family design of Seaforth's toiletries, replacing individual carton designs. All the products are now tied together with this new packaging theme.

Polyethylene Beakers

American Agile Corp., P.O. Box 168, Bedford, Ohio, is now producing nonbreakable polyethylene beakers and graduated cylinders. They are leakproof and provide excellent chemical resistance to most acids, the company reports, including hydrofluoric and its mixture, and alkalies, salt solutions, and a large number of organic chemicals, all at temperatures up to 175°F.



Non-breakable polyethylene beakers and graduated cylinders of American Agile Corp.

New Plastic Stopper

Special Glass Products Co. has developed a new stopper made of a special plastic material. Available in various colors, the stoppers are so flexible they may be bent over without breaking; they are not affected by perfumes or other materials.

The company is enhancing the sales appeal and beauty of its crystal glass Miniature Bottles through the use of these new stoppers.

New Display Stand for Lilt

Procter & Gamble is using a colorful new type of corrugated Selmor display stand for its home permanent, Lilt. Designed by Hinde & Dauch, the stand is printed with new-style fluorescent inks (applied with rubber plates) which lend a brilliance to the display. Red, yellow, blue and black colors, and the descriptive copy, convert the stand into a silent salesman.

There is a shallow top tray which permits orderly display of the product packages.

Recent New Products

Abbott Laboratories. *Filmtab Nembu-Serpin* (Nembutal and Reserpine), a sedative for mild anxiety states and mild essential hypertension.

George A. Breon & Co. *Blockain Hydrochloride*, a local anesthetic for block and infiltration injection.

Bristol Laboratories. Announces that *Zirnox lotion* for poison ivy, oak and sumac, may now be purchased at drug stores without a prescription.

Charles of the Ritz. *Special Formula Emollient.*

Denver Chemical Mfg. Co. *Antiphlogistine Rub A-535* has been renamed *Dencorub.*

Lederle Laboratories. *Incremin, Lysine-Vitamin Drops*, a new remedy for many cases of poor appetite and slow growth in infants.

Prince Matchabelli, Cosmetic Products Division. *Polyderm - 20 Compensating Cream.* A new face-and-throat cream, the first of a line of cosmetic specialties to be marketed by this Division.

Nion Corp. *Calcinatal.* A new prenatal tablet.

Pharma-Craft Corp. *Ebb Slick Deodorant*, in a pink plastic push-up tube for easy application.

Puget Sound Pharmacal Co., 306 W. Republican St., Seattle 99, Wash. Announces that *Cogesic-16*, containing 1/8 gr. codeine phosphate in two half-size tablets, is available without prescription.

A. H. Robins Co. *Ambar Tablets and Extentabs.* For improving the mood and mental outlook of the depressed or distressed patient.

C. A. Rolley Co. *Sea and Ski.* A tanning cream for the prevention of sunburn, packaged in a Bracon polyethylene tube made by Bradley Container Corp.

Schenley Laboratories. *Casculum Improved capsules*, for improved lipotropic activity with better capillary protection; and *Diafen*, a new antihistaminic product with low incidence of side effects.

Sharp & Dohme, Division of Merck & Co. *Urecholine.* For use in postoperative cases of abdominal distention, urinary retention and gastric retention.

Shulton. Three new gift sets of *Old Spice* shaving and grooming products, for Christmas sales.

Simonetta. *Incanto.* A new perfume from Italy.

The Upjohn Co. *Dipaxin.* A new anticoagulant drug; and *Cortef Oral Suspension*, the first oral fluid form of a hormone—in a fruit-flavored, oranged colored liquid.

For precision and versatility—choose
OWENS-ILLINOIS for PLASTICS

for example—
Fitments for metal containers (spouts and caps for aerosol shaving soap)
for example—
Fitments for glass nursery bottles
for example—
Specialty items—Tire valve and battery caps
for example—
Cosmetic containers

Owens-Illinois packaging know-how and high-quality standards offer you the *finest* in molding plastic facilities . . . Injection molding . . . Compression molding . . . A complete range in plastics for packaging, for specialties.

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Charlotte . . . North Carolina	Jacksonville . . . Florida	Omaha . . . Nebraska	Seattle . . . Washington
Chicago . . . Illinois	Kansas City . . . Missouri	Peoria . . . Illinois	Toledo . . . Ohio
Cincinnati . . . Ohio	Los Angeles . . . California	Philadelphia . . . Pennsylvania	Yakima . . . Washington
Cleveland . . . Ohio	Louisville . . . Kentucky	Pittsburgh . . . Pennsylvania	

PRECISION PLASTICS
AN (O) PRODUCT

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GENERAL OFFICES • TOLEDO 1, OHIO

Patent THOUGHTS AND TRENDS

*by Thomas Cifelli, Jr.**

PATENT ATTORNEY

RECENT COURT DECISIONS INVOLVING PATENTS AND THEIR SIGNIFICANCE

That a periodic check-up is a good thing few will deny. This applies to just about everything but is most-often linked with check-ups on the state of a person's or a business establishment's health. It follows naturally that a check-up on the state of health of patents should be worthwhile. Since the courts have the last say on patents, a review of recent court decisions involving patents appears to be a good barometer for patents.

In order to have the findings reflect more or less current court thinking—and in order to prevent this undertaking from reaching "project" proportions—this review has been limited to the court decisions published in July and August of this year in the U. S. Patents Quarterly. In addition, a brief summary of the activity of the U. S. Supreme Court in its 1954-1955 term is included in the present study.

Before beginning the analysis of the court decisions, it may be well to review very briefly the procedure by which patents are obtained and enforced. Patent applications are acted upon in the first instance by the Primary Examiners of the U. S. Patent Office, either by themselves or through their Assistant Examiners. If a patent applicant is dissatisfied with the final decision of the Primary Examiner he can appeal to the Board of Appeals of the U. S. Patent Office. If a patent applicant is still dissatisfied with a decision of the Board of Appeals he may bring a court action in a U. S. Federal Court or he may appeal to the Court of Customs and Patent Appeals. Since a large majority of the cases go to the latter court and since the latter court in effect sets the tone for the Patent Office tribunals, its decisions can be considered as reflecting the standards of the Patent Office in the issuance of patents.

*Richards and Cifelli
Newark, New Jersey

After a U. S. patent is obtained suits for infringement are in the exclusive jurisdiction of the U. S. District Courts located throughout the country. Appeals from the district court decisions are taken to one of the 10 U. S. Circuit Courts of Appeals, and from there litigants may attempt to have their cases decided by the U. S. Supreme Court, the court of last resort in patents as in other matters.

Court of Customs and Patent Appeals

During July and August this court handed down 17 decisions involving the question of whether or not a patent should be issued to an applicant. In only four of these cases did the applicant win out in whole or in part. In the other 13 cases the Court affirmed the Patent Office tribunals and refused to allow the issuance of any patent.

U. S. District Courts and U. S. Court of Appeal

During the period under study these Federal Courts held in five cases that the patents were valid in whole or in part and in five cases held the patents to be invalid.

U. S. Supreme Court

As pointed out in the U. S. Patents Quarterly, the 1954-1955 term of the U. S. Supreme Court was unique in that no cases in the field of patents and trademarks were decided by opinion. A total of 35 cases were brought up to the Court by Certiorari petitions but the Court refused to hear any of them. It may be of interest to note some of the cases wherein Certiorari was denied.

In a case involving Dr. Salsbury's Laboratories v. I. D. Russell Co. Laboratories, the Eighth Circuit Court had held that a patent on an aqueous solution containing a staple powder is misused where the patentee does not grant licenses and does not sell the solution, but sells the powder with directions for mixing it with water.

Cole v. Hughes Tool Co., where the Tenth Circuit Court of Appeals held that it is lawful for leases of patented drilling bits to provide for termination of the right to use at the termination of the useful life of the original cutter teeth and/or bearings;

Moist Cold Refrigerator Co., Inc. v. Lou Johnson Co., Inc., where the Ninth Circuit Court of Appeals held that a patent owner's failure to foresee a court decision holding claims void as functional was error through inadvertence or mistake within the sense of the reissue statute and therefore a corrected patent could be obtained.

Campbell v. Automatic Die & Products Co., wherein the Ohio Supreme Court held that an exclusive patent licensee is not excused from liability to pay fixed minimum royalties by the mere fact that the license contains a provision by which the licensee agrees not to manufacture or sell competing devices or engage in competing business; and

Consolidated Engineering Corp. v. United States, where the Court of Claims held that the manufacture for use of a patented invention, which is used in the production of atomic energy, is protected by the Atomic Energy Act, "used in the production of fissionable material" not being limited to equipment actually capable of producing fissionable material, but also including auxiliary equipment.

Discussion of Foregoing Court Decisions

It is believed that the recent actions of the Courts are significant. First, consider the U. S. Supreme Court. It had 35 distinct opportunities to validate or invalidate patents. Or put another

Beautifies! Protects! Sells!

...quality packaging by

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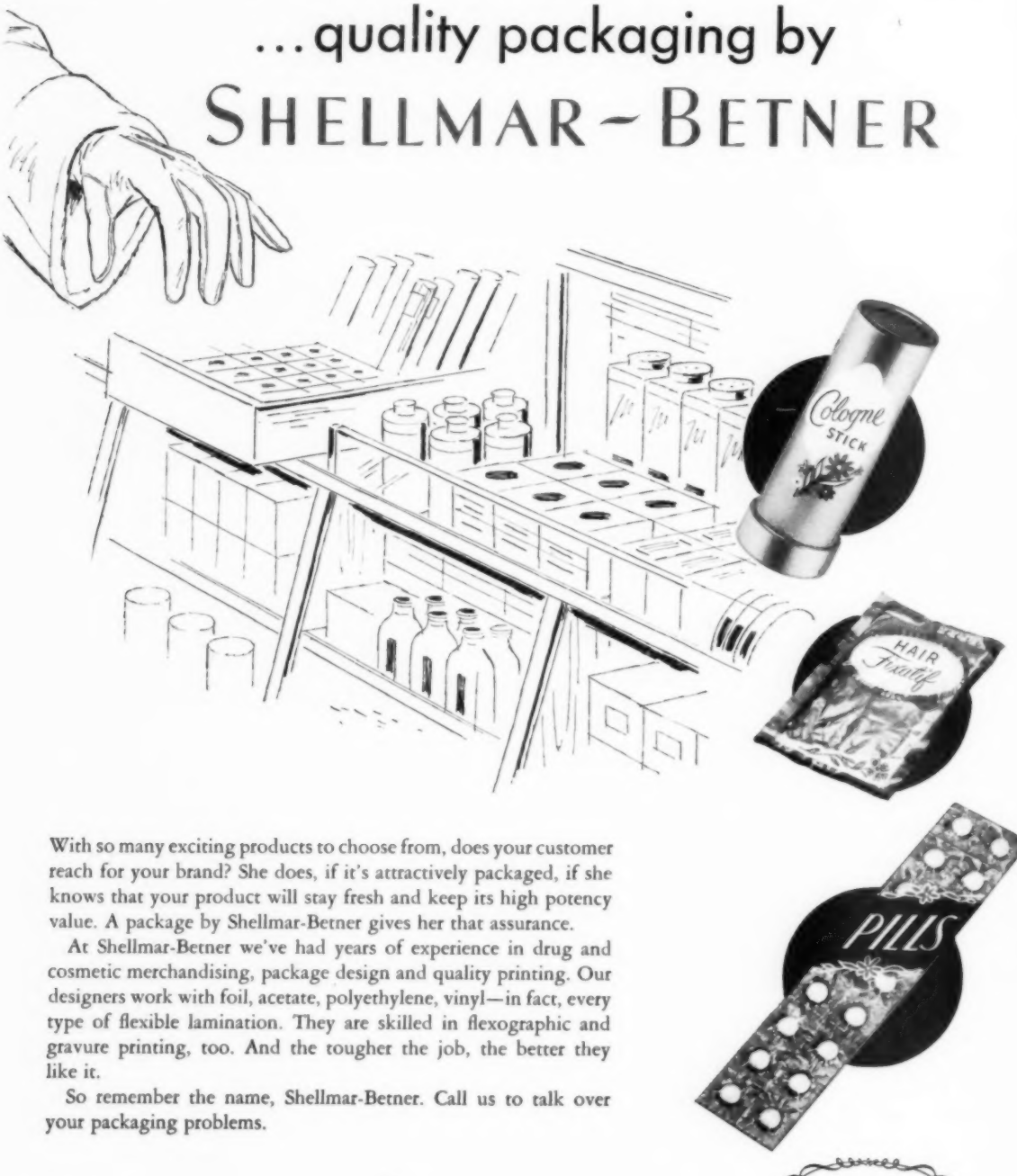

With so many exciting products to choose from, does your customer reach for your brand? She does, if it's attractively packaged, if she knows that your product will stay fresh and keep its high potency value. A package by Shellmar-Betner gives her that assurance.

At Shellmar-Betner we've had years of experience in drug and cosmetic merchandising, package design and quality printing. Our designers work with foil, acetate, polyethylene, vinyl—in fact, every type of flexible lamination. They are skilled in flexographic and gravure printing, too. And the tougher the job, the better they like it.

So remember the name, Shellmar-Betner. Call us to talk over your packaging problems.

Our Fiftieth Year of Tailor-Made Packaging

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way, the Court had 35 opportunities to give expressions to doctrines which might result in the emasculation of the patent system. The Court however merely left the parties in the condition in which it found them and did not see fit to add or subtract from the holdings of the lower Courts.

In view of this record it would appear reasonable to conclude that the present U. S. Supreme Court has shown no inclination to alter the U. S. Patent System, particularly as administered by the lower Federal Courts. This is quite at variance with what some observers have felt to be the case with the Court during the not-too-distant past.

Even more startling than the forebearance of the U. S. Supreme Court to whittle away at the Patent System during the 1954-1955 term is the record of the lower Federal Courts during July and August in favoring neither the patent owners nor the alleged patent infringers, the decisions being equally divided. It may well be that the July-August period, which was chosen simply because it is the most recent one to the date of this writing, may not be a truly typical period and if a longer period had been taken the picture might not be quite so favorable to patents. Nevertheless, it was not so long ago that one could read decision after decision unfavorable to patents, and, if the writer's recollection is correct, many months would have to transpire before it would be possible to find five cases where the patent owner left the Federal Courts with a valid patent.

When one comes to the decisions of the Court of Customs and Patent Appeals we have a different picture. Here, the patent applicant appears to be successful in only about 25 per cent of the cases.

Conclusion

The Court of Customs and Patent Appeals decisions show that if a patent applicant is unsuccessful in convincing the Patent Office tribunals he should have a patent, his chances of obtaining a patent through the intervention of this Court are rather slim. Patent owners employing the machinery of the Federal Courts can now feel reasonably certain that the Federal Judges will be sympathetic.

7-Dehydrosterol Patent Held Valid

In one of the cases which forms part of the survey reported above, Chief Judge Leahy, of the U. S. District Court (Delaware) upheld the validity of U. S. Patent 2,441,091 issued to van der Vliet and Stevens, covering a method for preparing a 7-dehydrosterol.

The patent involved 1. the reaction of a sterol derivative (such as cholesterol ester) with a halogenating agent which substitutes a corresponding halogen atom at the 7-position of the cholesterol molecule for the hydrogen atom; and 2. subjecting the resultant 7-halogenocholesterol to treatment with specific chemicals capable of dehydrohalogenating it. The inventive feature of the process is the second step which results in the introduction of a double bond at the 7-8 position of the designated molecule to produce the 7-dehydrocholesterol.

The prior art relied upon by the defendant narrowed down to two publications: one to Wohl and the other to Ziegler. The Court felt that the only precise citation of Wohl was that substances such as N-bromacetamide would "react with" various unsaturated compounds to produce a bromine atom at the carbon atom adjacent to the double bond. Plaintiffs do not dispute this for the patent refers to this known reaction. In fact, defendant conceded Wohl was not concerned with the essential inventive step which requires the 7-halogenocholesterol to be dehydrohalogenated in order to produce the desired 7-dehydrocholesterol.

Regarding the Ziegler article, the Court pointed out that the Patent Examiner considered it during prosecution of the application and allowance of the application over Ziegler entitles his article to little weight for it was overcome.

The Court felt that even though the Ziegler article was a long one only one paragraph reading as follows was relevant:

> With the utmost ease—in a few minutes—the esters of the cyclic olefin alcohol cholesterol can be brominated with bromsuccinimid. What is involved, as in all cases heretofore described, is a smooth substitution, since quantitatively succinimid is re-formed. Naturally we have further pursued obvious consequences. *On this subject we shall later report in a separate work.* (Emphasis added.)

The Court further pointed out that: Ziegler says nothing about the type of compound which would be formed by the described bromination reaction; and no reference is had to dehydrohalogenation treatment such as is required by the patent in suit to produce the desired 7-dehydrocholesterol. Ziegler makes no reference either to 7-halogenocholesterol or 7-dehydrocholesterol.

The Court concluded that a general synthetic organic chemist with no expertise in the chemistry of sterols, given Wohl and Ziegler (nothing else) could not have produced the substance of the patent by making use of general chemical information.

RECENT PATENTS

2,714,592—**G. D. Searle—Esters of 16, 17 - [3′, 1′ - (3′ - Carboxy - 2′ - Pyrazolino) Pregnen-20-Ones.**

2,714,593—**Schenley Industries—Dihydropyrrolo-(3, 2-c) Quinolines.**

2,714,594—**G. D. Searle—Halobenzoates of 1, 2, 3, 4-Tetrahydroisoquinolinealkanols.**

2,714,595—**Olin Mathieson — Isonicotinic Acid-1-Oxides.**

2,714,597—**Abbott Labs.—Halo Substituted 4(5)-Aryloxymethylimidazoles.**

2,714,599—**Upjohn—Oxidation of 3-Hydroxysteroids.**

2,714,600—**Upjohn — Oxidation - Chlorination of 3-Hydroxysteroids.**

2,714,601—**Upjohn — Alpha - Chlorination of 3-Ketosteroids.**

2,714,607 to *2,714,610*—**Ciba — Polyethoxy Esters of p-Butylaminobenzoic Acid, of Isocyclic Organic Carboxylic Acids, and of N-Substituted p-Aminobenzoic Acids.**

2,714,613—**Ciba — Di - (p - Substituted Phenyl)-Thioureas.**

2,714,615—**Ohio State Univ. R. F.—Oxonaphthalene Cortisone Intermediates.**

2,715,090, 2,715,092—**Labs. France de Chimiotherapie—Organic Penicillin Salt Solutions.**

2,715,091—**National Research Dev. Corp. (England)—Dextran Sulfate as Anticoagulant.**

2,715,125—**Gane's Chem. Works—7-Hydroxypropyl Theophyllines.**

2,715,129—**Abbott Labs.—5 - Hydroxytryptamine Production.**

2,715,581—**U. S. A.—Maple Sugar Products Having Enhanced Flavor.**

2,715,600—**Dr. Salsbury's Labs. — N, N′ - (3 - Nitro - Benzene - Sulfonyl) Ethylene-diamine Compositions for Treatment of Coccidiosis.**

2,715, 602—**U. S. A.—Vitamin B_{12} Manufacture.**

2,715,621—**Upjohn—Steroids.**

2,715,622—**Eli Lilly — Anthelmintic Dye Salts.**

(Continued on page 575)

Success of aerosol shows importance

Here's why an aerosol package is more than a container

Of course, an aerosol package is wonderful protection against breakage and spoilage or evaporation. Retailers surveyed recently gave that as one of the prime advantages of aerosols . . . a good package *should* protect the product.

But more than that, an aerosol package is interesting and catches the customer's eye and imagination. With aerosol containers it's also easy to put plenty of information on labels, completing your selling job at the point of sale.

Aerosol deodorants are ideal for getting rid of kitchen odors. Just the push of a button—and the job is done. Millions of housewives are getting the aerosol *habit*—ensuring repeat business.

room deodorants of a working package

Ask Du Pont how aerosol packaging can make your product more effective and push up sales

More and more housewives insist on aerosol room deodorants, won't even have the old-fashioned type in the house. A woman knows (and shows it with her pocketbook!) the fact that an aerosol takes away all the fuss and mess of an open bottle. Now all she does is push a button and . . . swish! . . . the job is done and the odor is gone.

Druggists across the country are profiting from the constantly increasing demand for easy-to-use aerosol products put up in a "working" package—not just a container but a *dispenser, too.* A revolution in human convenience is coming about as the drug and cosmetic industry moves into the Age of Aerosols.

And the *sales* impact of aerosol packaging shows up over and over again. For instance, conventional room deodorants have always been highly seasonal, with the low point coming in the summer months. On the other hand, *aerosol* room deodorants—efficient, shatterproof and easy to use—maintain a high level of sales throughout the year.

Of course, this is just one example. Shaving creams, colognes, perfumes and many other drug products are boosting sales by means of aerosol packaging. Customers know their aerosols these days . . . know that the aerosol is the easiest, neatest, most effective way to dispense a product. Thinking of putting your product in an aerosol package?

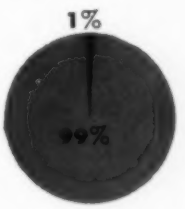
Du Pont and contract fillers can help you enter the aerosol field

As you know, there's a great deal more to it than just packaging your product in an aerosol container and sending out salesmen. That's why Du Pont offers you assistance in evaluating your potential aerosol product.

Du Pont will be glad to advise you on formulation and recommend the "Freon"* propellent that's best for your particular product. We'll put you in touch with contract loaders who will help you in the selection of container and dispensing valve. If you wish, we'll advise you on setting up your own laboratory program for aerosol research.

INFORMATION ABOUT the aerosol market is still another service you can expect from Du Pont, manufacturer of "Freon" propellents. Just clip the coupon below for further details about the skyrocketing aerosol market!

HERE'S HOW AEROSOL PACKAGING HAS GROWN AT THE RETAIL LEVEL



This chart shows conclusively how the retail druggists of the nation have received aerosol products. Du Pont's latest survey of the aerosol market revealed that 99% of the druggists interviewed stocked one or more aerosols. Retail acceptance like this can help you put over your product . . . in an aerosol package!

PIN THIS COUPON TO YOUR COMPANY LETTERHEAD

KINETIC

FREON

SAFE PROPELLENTS

**"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents*

DU PONT

REG. U. S. PAT. OFF.

Better Things for Better Living . . . through Chemistry

E. I. du Pont de Nemours & Co. (Inc.)
11500 Nemours Bldg., Wilmington 98, Delaware

- ☐ Please send your booklet on aerosol packaging, "Package for Profit."
- ☐ I am interested in market-research data.
- ☐ I am interested in learning how I can get technical assistance.

The type of product I have in mind for aerosol packaging is

_____

*Name*_____

*Position*_____ 158

Precision Vials to Meet any Requirements!

Demuth...the RIGHT Vial for You!

The Quality Line of the Year!

Snap Cap Vial
Polyethelene
Cap as Closure

Pictured in this advertisement are six of the commonly used styles of vials. Demuth makes many other specialized types of containers, and all these containers are fabricated from machine-drawn glass tubing. Great flexibility is possible in the development of specialized and individual containers without mold expense.

Demuth's complete line of lightweight crystal clear glass vials embodies quality and precision, complimenting the high standard of your pharmaceuticals, toiletries and other products, providing a quality package of high merchandising value.

The uniform wall thickness of Demuth vials means perfect visibility without distortion. They retain their clarity, will not cloud, craze or scratch. They provide protection, keeping your preparations fresh, dry and potent. They have eye appeal to help sell.

We solicit your inquiries and will be pleased to assist in working out any new development or packaging problem. For glass containers of the highest quality, buy Demuth. There's a Demuth vial to meet your exacting requirements.

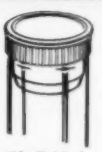
Ring Finish Vial
Snap Cap as Closure

Tooled Neck Vial
Polyethelene
Stopper as Closure

C. T. Finish Vial
Molded Plastic
or Metal Screw Cap
as Closure

Patent Lip Vial
Cork or Rubber
Stopper as Closure

THERE'S NO SUBSTITUTE FOR *Glass*



Shell Vial
Polyethelene
Stopper as
Closure

DEMUTH Pearglass PRODUCTS

DEMUTH GLASS WORKS, Inc.

PARKERSBURG, WEST VIRGINIA

Sales Offices
NEW YORK
CHICAGO
PHILADELPHIA

Cross Swing Sifters

SALES PACKAGES

Cross Swing Sifters — today's modern container — affords your package an all-round versatility which makes it stand out in competition and step out with greater sales.

Cross Swing Sifters are being used for cosmetics, foods, drugs, pharmaceuticals or any other product that can be dispensed through a shaker or sifter . . . Can we serve you?

MINIATURES

Now available with NEW plastic plug bottoms for easier filling. Cross round miniatures, an exact replica of your full size container, provides the answer for the perfect sample package. Both full size and samplers can be filled with any standard filling equipment. Ask for a representative to call, or write for details and samples.

CROSS PAPER PRODUCTS CORP.

4377 Bronx Boulevard New York 66, New York

CREATORS • MANUFACTURERS OF INDIVIDUALIZED ROUND AND OVAL PACKAGES

Depend on SCHOETTLE FOR FOLDING BOXES...
BOXES OF EVERY SHAPE AND SIZE AND FOLD . . . DESIGNED BY PACKAGING ENGINEERS WHO KNOW HOW TO CREATE THE BETTER, SMARTER, MORE ATTRACTIVE PACKAGE!
WE DON'T KNOW HOW TO MAKE ICE CREAM OR BUTTER OR FROZEN BEANS ...OR TOOTH-PICKS OR OATMEAL OR CORN FLAKES OR BISCUITS, BUT—
WE SURE KNOW HOW TO MAKE FOLDING BOXES FOR THEM—WAXED OR PLAIN—THAT PROTECT BETTER, ATTRACT BETTER, SELL BETTER!
Write, wire or phone... a consultation involves no obligation!
EDWIN J. SCHOETTLE CO. INC.
533 NORTH ELEVENTH STREET, PHILADELPHIA 23, PENNA.
Designers and Manufacturers of Paper Boxes with Buy Appeal!

Crown Closures assure trouble-free application. Because Crown Closures are continuously tested and checked during their manufacture, they are unexcelled for precision and uniformity. This means smooth, untroubled action on production lines.

Crown Closures seal dependably. The special features of Crown Closures, such as the famous Deep Hook Thread on Screw Caps and scientifically selected liners, mean sure protection...no matter what type of product you pack.

Crown Closures have the features consumers want. Today's consumers want protection *and convenience* in the closures on the packages they take home. Crown Closures answer their demands. They can be removed easily ... they re-seal tightly ... and they protect the original quality of the product.

Crown's Laboratory Service

Crown maintains two laboratories. One for research and development, the other as a customer's consulting service. The services of the latter are available without cost to help packers select the closure and liner best suited for their individual products.

Crown's Design Service

Customers of Crown may use without cost the services of a comprehensive design service. New designs will be created or adapted from present labels or trademarks.

CROWN CORK & SEAL COMPANY, INC. *Closure Sales* · BALTIMORE 3, MD.

World's Largest Maker of Metal Closures

#1

Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb; Saftee-ball glass.

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

#4

Metal cap: AMEKINE oil-resisting synthetic rubber bulb; blunt glass.

Improved bottle shape. Designed to lie flat for convenient labeling. Front provides ample label space.

New Perfection

DROPPING PARTS

Protect YOUR PRODUCT'S REPUTATION

Your product's hard-won reputation is risked every time it is taken from the medicine chest. Any inconvenience, such as a non-functioning dropper, will be permanently associated with it. You can remove this risk by entrusting your carefully-compounded preparation to New Perfection dropping parts—painstakingly made of quality materials for the utmost in dependability and cleanliness.

✱ ***We can supply dropping parts to fit your bottles or furnish complete with our own bottles.***

RUBBER BULBS

are supplied in many styles and colors. Oil-resisting AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS

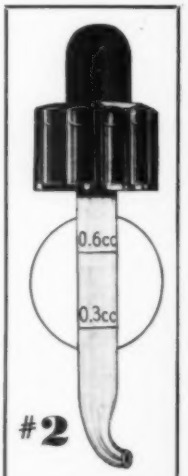
of plastic or metal, can be furnished in a complete range of sizes and colors.

DROPPER GLASSES

are available in a wide variety of styles and sizes. Plain or CALIBRATED in any color to mark specific dosages.

BOTTLES

in an attractive modernistic style in Amber, Blue, Green or Clear glass, are available, complete with dropping parts, in the following sizes: ⅛, ¼, ½, 1 and 2 oz.



#2

Non-rolling extra-depth Bakelite cap; thick flange rubber bulb; CALIBRATED special bent glass.

Write for Samples and Quotations

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

Our finest quality glass stoppered bottles
for perfume and toilet water

Tester Bottles

Left: No. H-900 (footed)
No. S-7222 elongated stopper

Right: No. H-900
No. S-300 elongated stopper

No. 352

Available in 7 sizes from ⅛ oz. to 8 oz. Supplied plain or with fired-on ceramic labels.

No. 435

Made in 3 sizes only—¼ oz., ½ oz., 1 oz. Available plain or decorated.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

Available plain, debossed, silk-screened or decorated with jewels. Goldcote caps shown come plain or jeweled. Other caps in various shapes and colors obtainable.

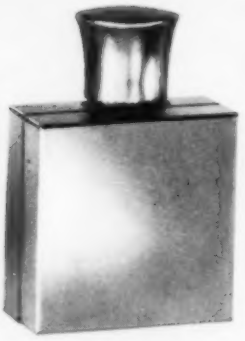
RICHFORD SPILLPROOF METAL ENCASED PERFUME FLACONS

Shaped for Sales!

Highly-Polished Brass, 1 dram Spillproofs in seven shapes — perfect for the purse — easy on the pocketbook. Write now for samples and prices.

No. 2201 Flat Oval

No. 2301 Bermuda



No. 2001 Square

No. 2251 Tall Oval

No. 2151 Tall Round

RICHFORD
CORPORATION
404 FOURTH AVENUE, NEW YORK 16, N. Y.

No. 2101 Watchcase

No. 2401 Nassau

ACTUAL SIZES SHOWN

PRIVATE LABEL AEROSOLS

...if you have an aerosol product
...if you have an aerosol project
...if you have an aerosol problem

LET
G. BARR & COMPANY
HELP YOU . . . Tens of millions of successfully selling aerosols are custom formulated and/or filled by G. Barr & Company for many of the nation's leading concerns. These are testimonials of leadership . . . earned through outstanding aerosol research laboratories . . . creative product development . . . meticulous quality control . . . effective production economies. And . . . G. Barr & Company markets no products of its own.

Whether you need help in developing a new aerosol idea or in filling a current product . . . whether you need 1,000 units or a million per week, G. Barr & Company's three aerosol filling plants—New York, Chicago, Los Angeles, can take care of your requirements now. Three key locations to assure you of freight savings and on-schedule delivery.

- *Aerosol filling by refrigeration or pressure.*
- *Aerosol packaging in metal, plastic, and glass containers.*
- *Aerosols as sprays, foams, powders.*
- *Aerosol cosmetics, insecticides, pharmaceuticals, waxes, cleaners, polishes, household products . . . your new product idea.*

Address inquiries to: 3601 S. Racine Avenue, Chicago 9, Illinois

G. BARR & COMPANY

Plants in: New York • Chicago • Los Angeles

* **Geranidar**

...when the cost of geranium goes up, the value of an excellent replacement is more important than ever... Geranidar is just such a replacement...

...the odor, value, character and stability of Geranidar have been time-tested for years.

Write on your letterhead
for samples and suggestions.

SYNTOMATIC CORPORATION
114 East 32nd Street • New York 16, N. Y.
Cable Address: SYNTOMAT, N.Y.

*Reg. U.S. Pat. Office

NEWS . . .

Kimbriel, Exec. Sec., NWDA

Harry A. Kimbriel, marketing vice-president of Eli Lilly & Co., has been appointed executive secretary of the National Wholesale Druggists' Association, according to James E. Allen, chairman of the Association's board of control. He is filling the vacancy created by the recent resignation of E. Allen Newcomb.

Mr. Kimbriel has been prominent in the drug industry for more than 25 years. Before joining Lilly in 1930, he was a retail druggist in Durant and Oklahoma City, Okla. for a number of years. He will asume the NWDA post on November 15, following the Association's 81st annual convention at White Sulphur Springs, West Virginia, from November 5 to 9.

HARRY A. KIMBRIEL

Schering Award to McKesson

Herman W. Leitzow, domestic sales manager of Schering Corp., recently presented one of the new "Schering 25-year customer awards" to Dr. Herman C. Nolen, executive vice-president of McKesson & Robbins, Inc. The award, a bronze mortar and pestle obtained from a special Schering collection of medieval pharmaceutical ware, is in recognition of McKesson's standing as one of the charger customers and distributors of Schering prescription specialties.

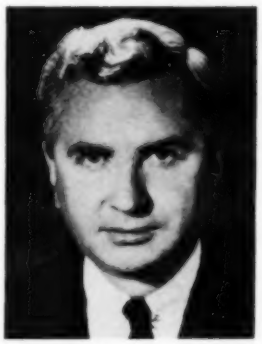
Mr. Leitzow, in presenting the award, stressed the growing importance of the wholesale druggist in the distribution of pharmaceuticals.

Grodberg with Gray Pharm.

Marcus G. Grodberg has been appointed technical director of the Gray Pharmaceutical Co., according to John Brennan, president. He will work with Dr. Hirsh W. Sulkowitch.

Voris, Pres., Seil, Putt & Rusby

Dr. Stephen S. Voris has been appointed president of Seil, Putt and Rusby, Inc., succeeding the late Earl B. Puttl. He has been chief chemist and research director for the firm since 1948.



JOHN T. CONNOR

Connor Named Merck President

John T. Connor has been elected president of Merck & Co., succeeding James J. Kerrigan who will continue as a director and chairman of the executive Committee. Henry W. Gadden has been elected to the new position of executive vice-president.

Mr. Connor joined Merck in 1947 and has held several executive positions in the company, including those of secretary, counsel and administrative vice-president. He was most recently vice-president and general manager of the Merck-Sharp & Dohme International division.

JAMES J. KERRIGAN

Bayliss on APMA Staff

William H. Bayliss has been appointed to the headquarters staff of the American Pharmaceutical Manufacturers' Association, according to Kenneth F. Valettine, president of Pitman-Moore Co., and president of the Association.

He will be assistant to J. O'Neill Closs, executive vice-president.

Stokes Heads DCAT

Sydney N. Stokes, assistant to the executive vice-president, Van Amerigen-Haebler, Inc., was elected chairman of the Drug, Chemical & Allied Trades Section of the New York Board of Trade at its 65th annual meeting at Pocono Manor, Pennsylvania, last month.

Additional officers include: J. David Hayden, eastern sales manager, R. P. Scherer Corp., as vice-chairman; W. Boyd O'Connor, president, Ayerst Laboratories division, American Home Products Corp., as treasurer; James G. Flanagan, vice-president, S. B. Penick & Co., counsel; and Helen L. Booth, secretary.

Those who were elected to the executive committee (excluding officers) were: Frank F. Black, Chas. Pfizer & Co.; Francis C. Brown, Schering Corp.; Ralph A. Clark, J. T. Baker Chemical Co.; Griffin Crafts, J. W. Wilson Glass Co.; Harold F. Cummings, Vitamerican

SYDNEY N. STOKES

Oil Corp.; James Day, the Dow Chemical Co.; Dr. Charles E. Dutchess, medical consultant; W. T. Halsted, Thos. Leeming & Co.; William W. Huisking, Chas. L. Huisking & Co.; Louis E. Kalty, Progressive Drug Co.; George H. McGlynn, Magnus, Mabee & Reynard, Inc.; Wm. J. Schieffelin, III, Schieffelin & Co.; F. M. Schwemmer, Ruthrauff & Ryan, Inc.; Fred G. Singer, E. I. duPont de Nemours & Co.; J. A. Singmaster, Jr., Monsanto Chemical Co.; and Stephen F. Urban, E. R. Squibb & Sons, division of Olin Mathieson Chemical Corp.

Monsanto Sales Changes

Arthur P. Kroeger, a director of sales of Monsanto Chemical Co., has been appointed associate director of marketing for the organic chemicals division, while Cyrus W. Merrell, also a sales director, has become assistant to the director of marketing.

Sets up Miller Laboratories

Samuel Miller, formerly executive vice-president of Schenley Laboratories, has established Miller Laboratories, Inc., with sales and executive offices at 103 Park Ave., New York, and product development and manufacturing facilities in Clifton, N. J. Mr. Miller is president.

The firm will introduce a series of new products based on patents in the chemical and packaging fields, representing unique advances in application technics and marked superiority over present counterparts in therapeutic efficacy. Anatoid, the first of these products, is scheduled to be marketed early this month.

Prior to his Schenley affiliation, Mr. Miller had been director of marketing and merchandising for the New York office of Lord & Thomas. He has had more than 20 years of experience in the drug and allied fields.

Tracy Retires—Fritzsche

Kenneth W. Tracy, in charge of perfume sales, Fritzsche Brothers, with whom he has been associated for the past 14 years, will retire from active business on December 31. He has been affiliated with the perfume, cosmetic and pharmaceutical trades for more than 40 years.

His first position was with Frederick Stearns & Co., after which he went to William R. Warner & Co. Mr. Tracy subsequently transferred to that firm's affiliate, Richard Hudnut Co., where he served first in sales and then purchasing. He has been with Fritzsche since 1941.

Mr. Tracy will be succeeded by Warren R. Godfrey who for the past 20 years has been manager of Fritzsche's Philadelphia office.

Ernest A. Lawson, cooperating closely with Mr. Godfrey, will continue to head the industrial odorant division. He has specialized in this field for 18 years.

KENNETH W. TRACY

E. L. Mabry, president of Vick Chemical Co. checking progress on new research laboratory building of J. T. Baker Chemical Co. With him are Baker executives M. W. Smith, president; Dr. J. R. Stevens, vice-president and operating manager; Dr. E. C. Larsen, vice-president and technical director; and Dr. George Ham, director of research.

Eustis, Pres., Strong Cobb

John N. Eustis has been elected president of Strong Cobb & Co., succeeding M. M. Ricketts who has resigned. Mr. Eustis has been serving the company as consultant in the management field for some time.

Michael Lauria has been promoted from vice-president and director of manufacturing, while Angelo LaFrance, general purchasing agent, has become director of materiel.

Emulsol Elections

Solomon Epstein, executive vice-president of Emulsol Chemical Corp., division of Witco Chemical Co., has become general manager of the company.

Dr. Charles Fuchs, formerly chief chemist of Emulsol, is now vice-president in charge of research and development.

Camilli Honored by France

Francois Camilli, of Camilli, Albert & Laloue, recently received the Order of Chevalier of the Legion of Honor from the French Government.

WARREN R. GODFREY

New Division for Chesebrough

Chesebrough-Pond's, Inc., has set up a new international division, with Lloyd V. Young as president, which will handle all Chesebrough and Pond business outside the continental United States. The organization will be divided into two subdivisions, according to Arthur B. Richardson, board chairman, with one under the immediate jurisdiction of Howard Casler.

As vice-president, Mr. Casler will be responsible for operations in Canada, Great Britain, northern Europe, South Africa, Australia and New Zealand.

Peter Isaza will head the other subdivision as vice-president in charge of operations in Central America, South America, the Mediterranean coastal area, the Near East and the Far East.

C. M. Baker, Jr., is assistant to the president of the International division.

SKF Adds Wing to Building

Smith, Kline & French Laboratories last month began constructing a $2,487,000 wing on its present building at 1530 Spring St., Philadelphia, according to Francis Boyer, president. This latest structure, to be ready late next year, will complete the company's $8-million expansion program which started in 1954.

New Research Lab. for Colgate

The Colgate-Palmolive Co. will construct new central research laboratories in the near future, according to present plans and has obtained an option to purchase a tract of 35 acres in Bloomfield, N. J., for that purpose.

The new laboratory will contain over 200,000 square feet of floor area and will employ between 350 and 400 people.

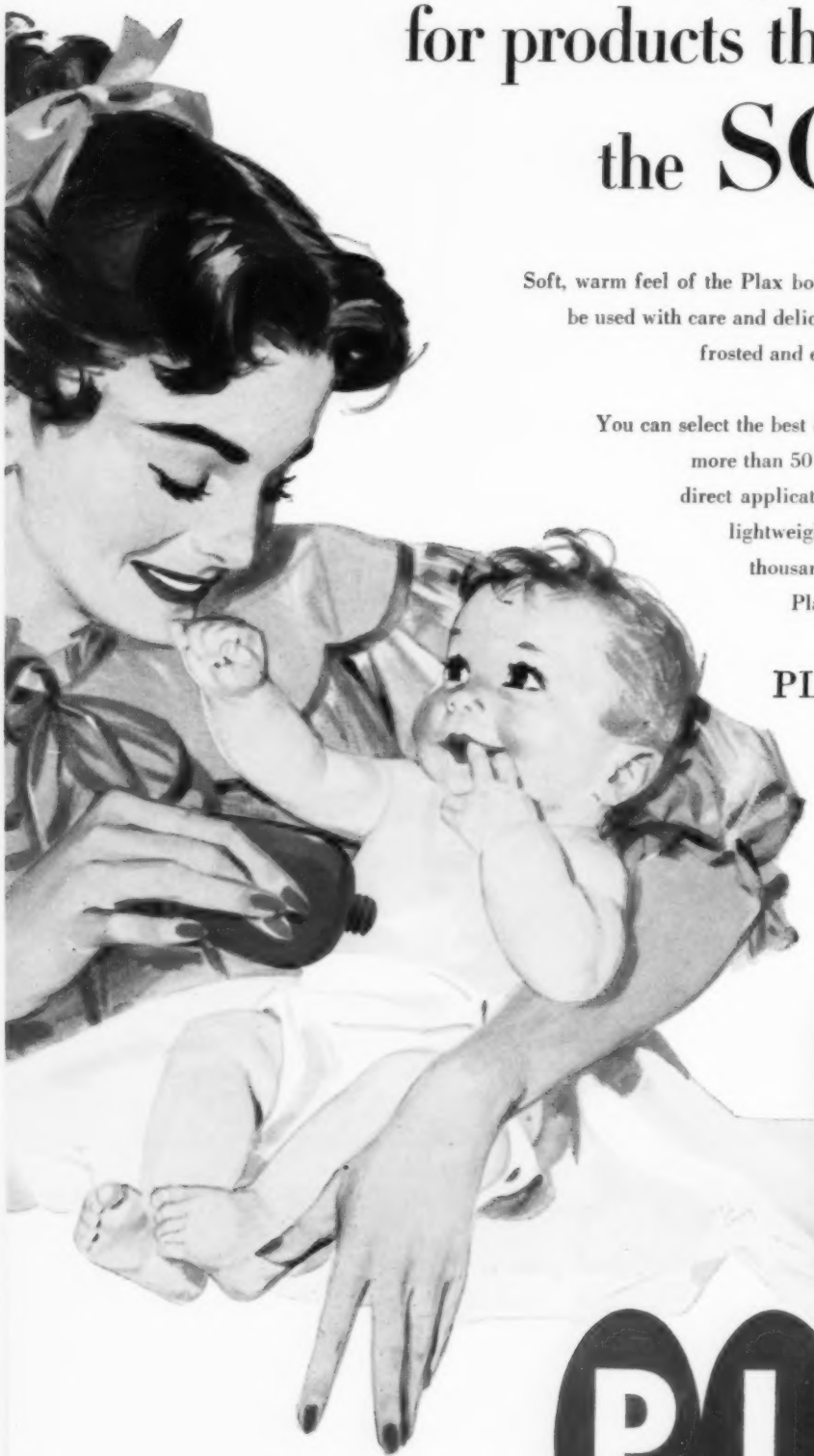
DISTINCTIVE PAIR...
MERLE NORMAN AND SHEFFIELD TUBES

"Gloves of comfort for the hands"... Merle Norman's Hand Cream, a wonderful product decoratively packaged in Sheffield collapsible tubes! Just as more and more women are using Merle Norman's fine Cosmetics, more and more manufacturers are discovering how practical and imaginative Sheffield tube-packaging can be. Note the duplication tube in miniature for gift sampling of products. For tubes of strength and beauty, produced by master craftsmen, order Sheffield Process collapsible tubes.

SHEFFIELD TUBES

THE SHEFFIELD TUBE CORP. · HOME OFFICES: NEW LONDON, CONN.
SALES OFFICES: NEW YORK, N.Y. · CHICAGO, ILL. · LOS ANGELES, CALIF.

There's a PLAX Package for products that need the SOFT touch



Soft, warm feel of the Plax bottle makes it ideal for products that must be used with care and delicacy. The surface can be smooth, pebbled, frosted and embossed in almost any design. Choice of colors and shape is almost unlimited.

You can select the best dispensing method for your product from more than 50 different fitments — spray, drop-by-drop, direct application or controlled pouring. What's more, lightweight Plax bottles can save you hundreds of thousands of dollars in shipping costs. Consult Plax for the best in convenience packaging.

PLAX CORPORATION

P. O. Box 1019, HARTFORD, CONNECTICUT

IN CANADA: Plax Canada, Ltd., Montreal and Toronto

PLAX

In plastic bottle packaging, only Plax offers continuous research, complete design service, and long experience.

Roche Builds New Laboratory

Hoffmann-La Roche has added a pharmaceutical laboratory, embodying all the latest scientific improvements, to its Nutley, N. J. plant. The three-story building was constructed in such a way as to provide for future expansion to double the present area.

Drawing of newly completed research building, Hoffmann-La Roche, which contains all the latest scientific improvements and is completely air-conditioned. Laboratory is equipped with an emergency generating system.

Dow Chem. Consolidation

The fine chemicals sales unit of the Dow Chemical Co. has been consolidated with the organic chemicals sales section under the management of James W. Harris, according to Donald Williams, vice-president and director of sales. Mr. Harris, with Dow since 1932, had been in charge of organic chemicals sales for nine years.

Donald B. Black will become product manager of fine chemicals sales as a new unit of organic chemicals sales.

Retained by Canada Packers

Norman Applezweig Associates, consulting biochemists, have been retained as technical advisors in the United States by the Research Laboratories and fine chemical division of Canada Packers, Ltd., Toronto, according to W. F. McLean, president.

Patrick with F. J. Stokes

Loren A. Patrick has joined the Los Angeles sales staff of F. J. Stokes Machine Co. as a sales engineer, according to Ray Anderson, district manager.

Heads New Division at Eaton

Meredith R. Gardiner, V.M.D., has been appointed chief of the new division of pathology, Eaton Laboratories, according to Dr. William B. Stillman, research director. His division will handle all toxological work in the research department, including the histologic examination of animal tissues.

New Chesebrough Headquarters

Chesebrough-Pond's Inc., will set up new headquarters in the office building now being constructed at 485 Lexington Ave., New York. It is expected to be available for occupancy by the fall of 1956. This move is a consolidation of facilities of Chesebrough Manufacturing Company, Consolidated, and Pond's Extract Company, which were merged on July 1.

Johnstone with Merck 25 Years

Henry W. Johnstone, senior vice-president, Merck & Co., and president of the company's chemical division, was honored by his associates last month at a dinner in the Down Town Club, Newark, N. J. Having completed 25 years of service with Merck, he was inducted into the Merck Quarter Century Club at that time.

Mr. Johnstone was appointed manager of the Rahway plant in 1931, the year after he joined the company and became vice-president in charge of operations in 1936. He was elected a board member in 1945 and became senior vice-president in 1950. After the merger of Sharp & Dohme and Merck in 1953, he took on the added duties of president of the chemical division.

Carbide Exec. Changes

J. M. Cole and J. H. Mathewson have been appointed product managers, and George Trigaux, assistant product manager, in the fine chemicals division of Carbide and Carbon Chemicals Co., according to W. A. Woodcock, manager of fine chemicals.

Mr. Cole will be responsible for the market development of chemical intermediates, and Mr. Mathewson, for the market development of Flexol plasticizers and stabilizers for vinyl resins.

Mr. Trigaux, who is being transferred from the company's South Charleston plant, will assist Mr. Cole. He had formerly been area supervisor in charge of one of the production units.

Bradley Moves N.Y. Office

Bradley Container Corp. has moved to larger office space at 655 Madison Ave., New York 21. E. W. Smith III is sales manager in charge of the regional office.

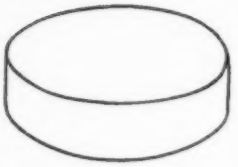
Smith with J. B. Williams

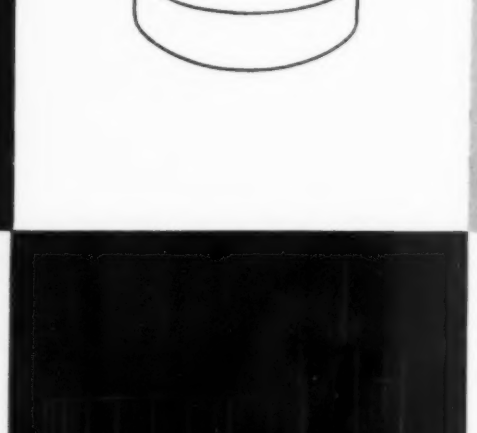
Dr. Douglas S. Smith has been appointed director of research and development for the J. B. Williams Co., according to Charles T. Lipscomb, Jr., president. He was formerly with G. D. Searle & Co.

DR. MEREDITH R. GARDINER

HENRY W. JOHNSTONE

DR. DOUGLAS S. SMITH





an ideal

ammonium chloride

for tablets or liquid products

Baker Ammonium Chloride is a dual purpose chemical designed for making either tablets, or liquid preparations at minimum cost.

Baker Ammonium Chloride is physically uniform. It is made in the proper range of particle size to permit direct compression into tablet form or to go into solution quickly. This dual purpose feature eliminates duplicate inventories for you, and helps reduce your production costs.

The purity of Baker Ammonium Chloride is precisely controlled from raw materials to finished product. It is produced in stainless steel and other specialized equipment as an added safeguard to this purity.

Whatever may be your requirements for Ammonium Chloride — call on Baker. Samples and prices will be forwarded gladly upon request. Address your letter to *Fine Chemical Division*, J. T. Baker Chemical Co., Phillipsburg, New Jersey.

Baker Chemicals

REAGENT • FINE • INDUSTRIAL

Baker CHEMICAL

Arnar-Stone Labs. Expands

Arnar-Stone Laboratories last month moved into its new plant and general offices at 225 East Prospect Ave., Mount Prospect, Ill., a suburb of Chicago. This expansion was made necessary by the increased sales of Americaine Ointment and Americaine Aerosol, as well as the introduction of several new pharmaceutical specialties.

New plant of Arnar-Stone Laboratories at Mount Prospect, Ill., which company moved into last month. Expansion was made necessary by increased sales of its products.

Pfeiffer Visits U. S.

Kurt J. Pfeiffer, technical director of OREG, Geneva—Switzerland, and a member of the Society of Cosmetic Chemists, visted the United States last month to assist in the Seminar in New York on September 15 and 16.

OREG (central office for research and control of the cosmetic industry) is responsible for the manufacture and sale of "Tokalon-Products" in more than 34 countries. The firm was founded in Paris some 50 years ago by E. Virgil Neal, and subsequently became an international organization for the production of "Tokalon" beauty creams and face powders.

OREG works in close collaboration with eminent specialists in the cosmetic field in order to maintain the highest standards for its products. The firm recently developed, in collaboration with a well-known Swiss dermatologist, a deodorant which has been studied and tested for several years in university clinics in Germany and Switzerland.

Mr. Pfeiffer and his staff are responsible for supervising the manufacture and control of these cosmetics wherever they are produced.

Stokes & Smith Appointments

J. Russell Sonneborn, a member of Stokes & Smith Co. for many years, has been named general sales manager.

John S. Stokes, Jr., formerly assistant to the company manager, has become customer service manager.

Sumner's 20th Anniversary

Sumner Chemical Co., Zeeland, Mich., a wholly owned subsidiary of Miles Laboratories specializing in service to the pharmaceutical industry, celebrated its twentieth anniversary last month. At the celebration, Ralph L. Ericsson, executive vice-president of the company, reported that sales were up four per cent during the first half of 1955 compared with the first half of 1954. Sumner plans to accelerate both phases of its expansion for the rest of 1955, he said. Three separate plant expansions are in progress for custom industrial assignments, he added.

Parke-Davis Appointments

Joan Apgar has been appointed a research assistant in the virus section of Parke, Davis & Co., supervised by Dr. I. W. McLean, Jr.

Mary L. Mabis has been named a junior biologist in polio vaccine development, reporting to Dr. A. E. Hook.

Florence R. Modlinsky has become assistant research microbiologists, supervised by Dr. I. W. McLean, Jr., and Richard D. Stockey, a research assistant in antibiotic development, under Dr. H. E. Machamer.

Schieffelin Appointments

Franklin H. Bivins, formerly with Bristol-Myers, has been appointed production manager of Schieffelin & Co.

Dr. Alfred Halpern, previously director of E. Fougera Co., has been named scientific director.

Wampole Appointments

Edwin P. MacNamara has been appointed district sales manager of Henry K. Wampole & Co. and will supervise the representatives in the firm's newly created New York division. This division consists of New York and New Jersey as well as the New England states.

Nicholas A. Gallo has become a special representative of the company and will serve as a coordinator of clinical investigative work with the physicians, clinics, hospitals and medical schools in Philadelphia. He will also supervise the activities of the representatives in Pennsylvania.

New Plant for Schering

Schering Corp. is constructing a $1 million sterile product laboratory and packaging building at Union, N. J., which is scheduled for completion in the Spring of next year.

The new building will be especially designed and equipped with scientific devices to insure sterility of the company's products from the raw material stage to the finished package.

Lilly Appointments

A. Malcolm McVie, Jr. has been appointed assistant director of the accounting interpretation division, Eli Lilly & Co., and Raymond J. Terkhorn has been promoted to assistant director of the accounting operations division.

J. RUSSELL SONNEBORN

FRANKLIN H. BIVINS

DR. ALFRED HALPERN

— NEROLI SYNTHETIC —

"SCH. & CO."

•

Approximately 20% more effective than the finest Neroli Bigarade distillate in strength and in odor. It does not discolor, and costs but a fraction of the genuine oil.

•

A timely product now that prices for the natural are so high.

SCHIMMEL & CO., INC.
601 West 26th Street, New York 1, New York

Wolfe, Merck Advg. Manager

H. George Wolfe, formerly copy director, has been appointed advertising manager of Merck & Co., chemical division. A registered pharmacist, he has served as a store manager, laboratory chemist and salesman in this country, as well as in England, France, Switzerland and Germany.

H. GEORGE WOLFE

In du Pont "Freon" Sales Post

Robert A. Geuting has been appointed sales representative for du Pont's "Freon" aerosol propellents in the Cleveland area, reporting to the Chicago district office of the "Kinetic" Chemicals division. For the past five months he has been assigned to propellent sales, working out of the company's home office in Wilmington.

To Address Cos. Chemists

Dr. Kenneth L. Russell, president of the Society of Cosmetic Chemists, will be the guest speaker at the New York Chapter's meeting on October 26 which will be held in the Metropolitan Room of the Brass Rail Restaurant, 43rd St. and 5th Ave., New York.

This will be an open dinner and meeting, according to Michael A. Stanton, chairman of the Chapter, who states that guests are welcome.

Promoted by Carbide

R. W. Eddy and J. J. Morris have become assistant managers of the fine chemicals division of Carbide and Carbon Chemicals Co., according to John A. Field, vice-president, and will report to W. A. Doodcock, manager of fine chemicals. Mr. Eddy had formerly been product manager directing market development of chemical intermediates, and Mr. Morris, product manager directing market development of Flexol plasticizers and stabilizers for vinyl resins.

Sears, Exec. Director, PMMI

Russell L. Sears, vice-president and general sales manager of Lynch Corp., has been appointed executive director of Packaging Machinery Manufacturers Institute, Inc. He resigned from his Lynch Corp. position to assume his new duties at the Institute headquarters in New York.

He will coordinate the trade association activities of the 70 members companies which manufacture automatic packaging machinery and will also serve as director of the Packaging Machinery and Materials Exposition of 1956 scheduled for next September.

Rowell Labs. Expands

Rowell Laboratories has begun construction on a large addition to its plant in order to enable the company to keep pace with a greatly increased volume of business.

Named Felton Sales Mgr.

Adolph Dingfelder has been appointed sales manager of Felton Chemical Co. He joined the firm five years ago as an executive in the export department.

ADOLPH DINGFELDER

Heyden Grant to Columbia

Columbia University has received a grant-in-aid from Heyden Chemical Corp. for organic chemical research under the direction of Dr. Cheves Walling, Professor of Chemistry, according to Dr. Herman Sokol, Heyden Vice-president.

Hagelin on Dreyer Sales Staff

Roy W. Hagelin, formerly with Dodge & Olcott Inc., has been added to the sales staff of P. R. Dreyer Inc. and will cover the Eastern states.

Johnsen with Economic Mach.

Arthur R. Johnsen, formerly with New Jersey Machine Corp., has been appointed sales engineer in the Chicago office of Economic Machinery Co.

New Ethanolamines Unit for C&C

Carbide & Carbon Chemical Co. is planning to construct a large ethanolamines unit at Seadrift, Texas, which will be completed in the fall of 1956. These facilities will more than double Carbide's ethanolamines capacity, according to H. B. McClure, president. The Seadrift plant is a major installation for the production of ethylene oxide, ethylene glycol and butadiene, and the new ethanolamines unit will be fully integrated with these facilities.

With Colgate-Palmolive

Dr. Harry William Gordon and Mrs. Alice June Wei have joined the Biochemistry Group in the research and development department of Colgate-Palmolive Company's Division of Dental Medicine.

Dr. Gordon, an expert on enzymology, was research biochemist and instructor at the NYU-Bellevue Medical Center.

Mrs. Wei was formerly associated with the Jersey City Medical Center in clinical chemistry.

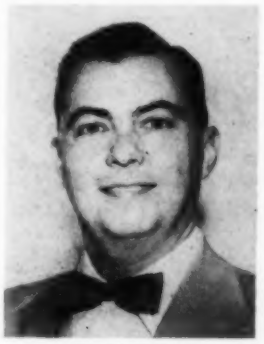
New Stearate Plant—Witco

Witco Chemical Co. opened a new metallic stearates plant at 3460 Wilshire Blvd., Los Angeles on September 22. This expansion enables Witco to provide West Coast stearate customers with the same services now offered to Midwest and Eastern industries, according to Max. A. Minnig, executive vice-president.

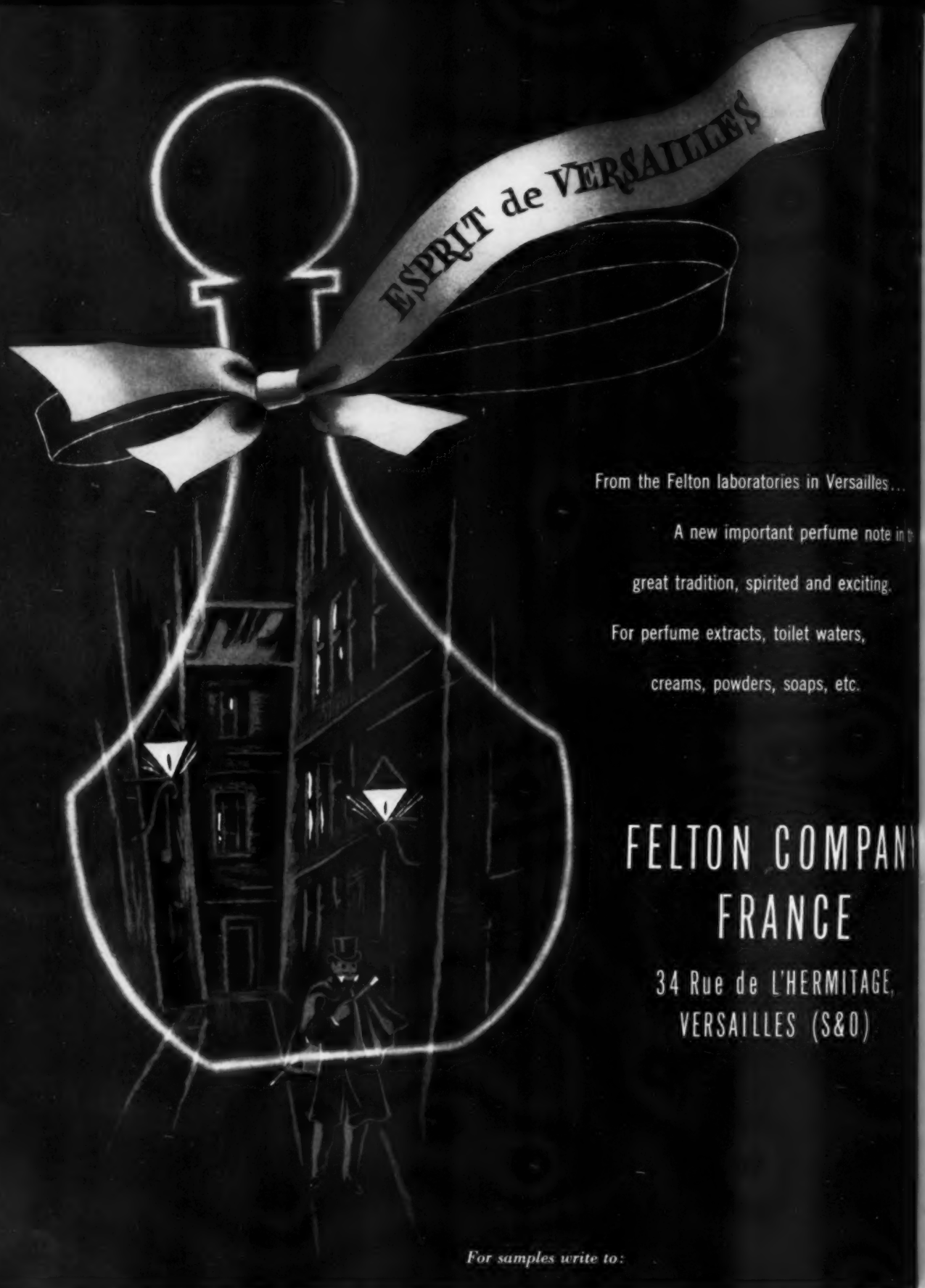
S. M. Freeman, West Coast regional vice-president, is responsible for the plant operations.

Promoted by Bristol-Myers

Carmine Dragotta, assistant traffic manager of Bristol-Myers products division, has been named head of the materials handling department of the division.



CARMINE DRAGOTTA



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Morone with D & O

Pasquale J. Morone has joined the sales staff of Dodge & Olcott and will have his headquarters in the New York offices.

PASQUALE J. MORONE

Clark Promoted by Cyanamid

Hamilton E. Clark, formerly sales manager of the animal feed department of the fine chemicals division, American Cyanamid Co., has been appointed western regional sales manager. With offices in Los Angeles, he will direct the sales activities of the animal feed, pharmaceutical and food industry departments.

Mackie Joins Rhodia

W. C. Mackie has been appointed technical sales representative on the Pacific Coast by Rhodia Inc. for its aromatic chemicals and "Alamask" industrial reodorants. He will supervise both sales and engineering in the fields of industrial odor control and abatement, and will handle requirements in the perfume, cosmetic, drug, flavor and specialty markets.

Represents Aromatic Products

Sol Kaplan, of the L. E. Offutt Co., Memphis, has been appointed the new sales representative of Aromatic Products, Inc., for the state of Tennessee, according to M. J. Lemmermeyer, president.

Peirce Promoted by Lilly

Dr. James D. Peirce, head of the industrial medicine and safety department of Eli Lilly & Co., has been promoted to assistant director of the personnel relations division. He will continue to serve the company as a physician and as head of the Lilly industrial medicine and safety program.

Miss Warner with Foster Snell

Muriel E. Warner, former director of the American Medical Association microbiological laboratory, recently joined the staff of Foster D. Snell.

Bowles, Pres., Rexall Div.

John Bowles has been appointed president of the Rexall division of the Rexall Drug Co., according to Justin W. Dart, president. He had formerly been vice-president in charge of sales for the western division.

Plant, Advg. Mgr., Block Drug

Alfred L. Plant has been appointed advertising manager of Block Drug Co. He was formerly senior account executive at Warwick & Legler and Grey Advertising Agency, handling drugs and toilet goods products.

Wisinski Promoted by Gair

William Wisinski has been appointed superintendent of the Los Angeles Corrugated Box division of Robert Gair Co., according to J. P. Greiveldinger, production manager of container operations. He had formerly been general foreman of the Angelus plant following Gair's acquisition of the Angelus Paper Box Co.

WILLIAM WISINSKI

Marvin R. Thompson Expands

Marvin R. Thompson has moved its research, product development and product divisions and its general offices to 52 Davenport St., Stamford, Conn. The sales and advertising offices, under E. M. Tarplin, vice-president, remain at 67 Greenwich Ave.

Promoted by Bristol

George Burns, with headquarters in Larchmont, N. Y.; William McKinney, Dallas; and Philip J. Hahn, New York City, all sales representatives of Bristol Laboratories, have been promoted to district managers, according to Richard A. Anderson, vice-president and director of marketing.

Crawford in Lilly Exec. Post

Kent R. Crawford, with Eli Lilly & Co. since 1951, has been named manager of the budget department.

Winthrop-Stearns Conference

Winthrop-Stearns held its annual company medical research conference in New York City from September 26 to 28. Conducted by Dr. J. B. Rice, director of medical research, the meeting was attended by the company's national staff of research men. Discussion panels were led by Dr. Rice; Dr. A. Scribner, associate medical research director; Dr. E. J. Foley, head of the medical department; and Dr. Ross Sayers, assistant medical research director.

Chic. Perfumery Luncheon

The Chicago Perfumery, Soap & Extract Association held the first of its Fall luncheons on September 20 at the Illinois Athletic Club. Dr. Herman N. Bundeson, president, Board of Health, City of Chicago, as guest speaker, talked on "The Polio Controversy and Its Effect upon You."

Polak's Frutal Execs. in Europe

Jac Polak, chairman of the board, and Ernest Polak, research director, left for Europe last month to visit the company's plants in Holland, France and England.

Pallotta with Hazleton Labs.

Dr. Arthur J. Pallotta has joined the technical staff of Hazleton Laboratories. He is especially interested in the use of ion exchange resins in medicine.

Witten Pres., Juliette Marglen

Laurence Witten, formerly vice-president and board member of Allied Public Relations Associates, has become president of Juliette Marglen, Inc. The firm was recently bought by Faberge Perfumes. His new office will be at the Faberge Town House, 5 West 54th St., New York.

LAURENCE WITTEN

Midwest-Overseas Named Agent

Midwest-Overseas Trading Corp., 647 West Virginia St., Milwaukee 4, has been named sole sales agent of Westbrook Lanolin Co., England, for the Midwestern area of the United States. Westbrook specializes in the manufacture of the finest qualities of cosmetic and pharmaceutical grades of lanolin, liquid lanolin, and wool alcohols, states Otto K. Namtvedt, president of Midwest-Overseas Trading Corp., which will carry ample stocks of all products.

J. W. Adams is manager of Westbrook Lanolin Co., while Jas. Thompson is managing director of the parent firm, Woolcombers, Ltd., both of which are located in Bradford, England.

Weisbrodt, Ciba Advg. Manager

Albert J. Weisbrodt has been appointed advertising manager of Ciba Pharmaceutical Products Inc., according to Paul W. Roder, advertising vice-president. He was formerly director of promotion for Davis & Geck, Inc.

Daly Promoted by Bristol-Myers

David M. Daly, traffic manager of Bristol - Myers, has been appointed traffic director of Bristol-Myers Products division, according to William M. Bristol, III, vice-president in charge of production.

Advg. Director, Charles Antell

Harold Tuers, formerly advertising manager of Harriet Hubbard Ayer, has been appointed director of advertising for Charles Antell, Inc.

In Matchabelli Advg. Dept.

Charles M. Silletti has been appointed assistant advertising manager of Prince Matchabelli.

Express Faith in Cutter

Cutter Laboratories last month received a plaque from the California Pharmaceutical Association expressing "faith and confidence in this fine California institution." Louis Stein, president of the Association; Ray King, past-president; and Cecil Stewart, secretary, represented the drug group in making the presentation of the resolution to Dr. Robert K. Cutter, who received the plaque on behalf of the 58-year-old pharmaceutical firm.

McLoughlin with Vick Chemical

John T. McLoughlin, formerly with Johnson & Johnson, has been appointed to an executive post in the acquisitions department of Vick Chemical Co.

JOHN T. McLOUGHLIN

Doherty, Advg. Mgr., Bristol-Myers

Michael K. Doherty, formerly with Lever Brothers, has been appointed advertising manager of Bristol-Myers Products division, according to Donald S. Frost, vice-president in charge of advertising.

MICHAEL K. DOHERTY

Named by Shulton

Mrs. Helga Krevald has been appointed to the staff of the toiletries research and development section of the chemical laboratories, Shulton, Inc., according to George L. Schultz, president. Mrs. Krevald was previously associated with the Almay division of Schieffelin as senior pharmaceutical chemist.

Named Advg. Mgr., White Labs.

George B. Rooney has been appointed advertising manager of White Laboratories, according to H. L. Patterson, director of advertising and sales promotion. He had formerly been assistant to Mr. Patterson.

Hall on Shulton Sales Staff

Francis Hall, Jr., has been added to the sales staff of Shulton, Inc., according to George L. Schultz, president. He will be responsible for the sales of Shulton's line of women's toiletries and men's shaving preparations in the Metropolitan Boston, Maine and New Hampshire areas.

Herbert R. Anderson

Herbert R. Anderson, sales manager of the northern division, Norwich Pharmacal Co., died September 7 at 57 years of age. He joined the company's sales organization in 1934, becoming a divisional manager in 1947.

He is survived by his wife, Mrs. Edna C. Anderson; four children, Carl, Robert, William and Sharon; and a brother, two sisters and two grandchildren.

Harry A. Cunningham

Harry A. Cunningham, credit manager of the Norwich Pharmacal Co. for 26 years, died at Norwich, N. Y., on September 16 at the age of 58. He was a member of the Drug & Chemical Credit Round Table, the New York Credit & Financial Management Association and the Norwich Club.

He is survived by his wife. They had been married 30 years.

George Epstein, Sr.

George Epstein, Sr., manager of the Chicago branch of Abbott Laboratories, died September 5 in the Passavant Hospital, Chicago, after a heart attack. He was 64 years old.

Mr. Epstein was a sales representative of the company until 1928 when he became manager of the Chicago district, and from 1946 to 1952 he was manager of Abbott's central division.

Surviving are his widow, Ruth; a son, George, Jr.; a brother, Leo; and four sisters, Mrs. Freida Burke, Mrs. Julia Oldham, Mrs. Zelda Butler and Mrs. Naomi Waddell.

Horace Joseph Hamlin

Horace J. Hamlin, general credit manager of Anchor Hocking Glass Corp., died August 3 at his home in Lancaster, Ohio, following a prolonged illness. He was 69 years old. He joined Anchor Hocking in 1938 as acting treasurer, later becoming assistant secretary, comptroller and then credit manager. He was subsequently named general credit manager, a post he held until his death.

To a Drug or Cosmetic Company seeking a sales and manufacturing link in South America

We (an advertising agency) represent a well-established and successful pharmaceutical manufacturer located in an important country in South America. They have aggressive management, modern manufacturing facilities and a well-staffed distribution apparatus. Both the facilities for manufacturing and distribution are capable of considerable expansion without any loss of efficiency or increase in proportional operating costs.

They are prepared to make available to any affiliate these plant and personnel facilities together with their intimate knowledge of this market area.

All communications will be held strictly confidential.

The principals of this company are due here shortly and will enter into direct negotiations with you. Please address your replies to Box 10, *Drug and Cosmetic Industry*, 101 West 31 Street, New York 1, New York.

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PRECIPITATED CALCIUM CARBONATE U.S.P.

Quality PCC for Dentifrices—Sturge PCC forms stable dispersions in glycerine-water mixtures. Gives you a chemically inert controllable polishing agent without taste or grit.

Quality PCC for Pill & Tablet Coatings—Sturge gives you uniform texture and a high white color. It's neutral and free from taste.

Quality PCC for Powders—You get consistent covering powder and absorbancy, with proper slip and adhesiveness. And Sturge maintains delicate scents, cuts the risk of fading colors.

Quality PCC for Fillers—Sturge PCC has the best consistency and texture for extending or pigmenting your lipsticks, creams and skin preparations.

Since 1823, the producer, John & E. Sturge, Ltd., of Birmingham, England, has manufactured fine chemicals. Their experienced laboratories are available for studying any customer's problems. For a sample and further information, contact H. J. Baker & Bro.

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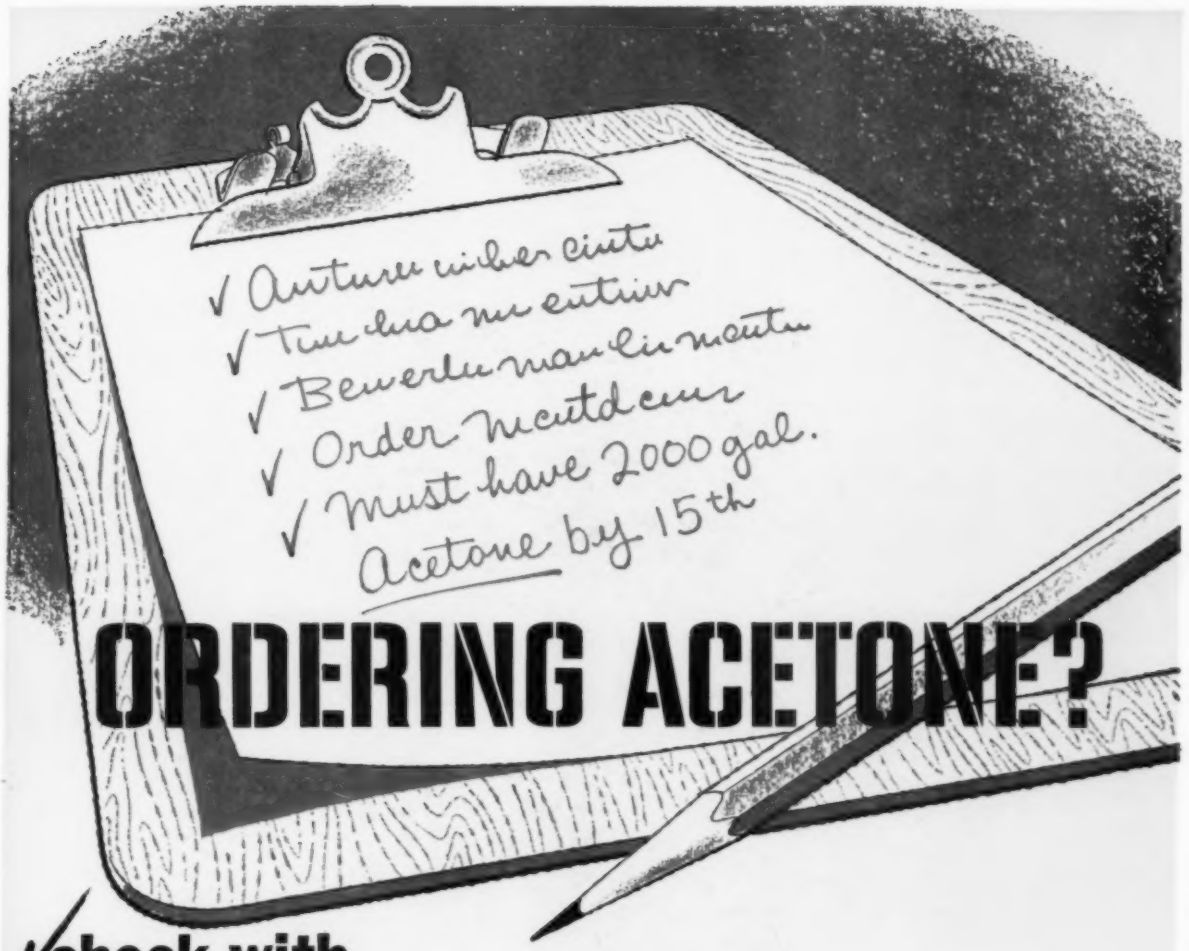

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WHEN YOU make Shell Chemical your headquarters for acetone and other solvents, you automatically have fewer supply worries.

You need never give *purity* a second thought, because Shell Chemical maintains quality-control standards that are among the industry's highest—all the way from the plant to your door.

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And you can keep costs low by taking full advantage of bulk prices available through compartment tank car and truck deliveries. Order several solvents at a time, and watch costs go down!

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Place that next acetone order with Shell and you'll agree with thousands of other customers, small and large, that Shell is your dependable source! Write for the catalog SC:54-40 on Shell Chemical solvents.

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Distinctive oval Sterane tablets are produced on a Stokes tablet machine at Chas. Pfizer & Co., Inc. Tooling for these tablets was made by Stokes on a fast production schedule to meet the product's introduction date.

Pfizer Sterane* promises new hope to arthritics

New drug marketed in distinctive oval tablets produced on Stokes machines

Sterane, the powerful new anti-arthritic and anti-inflammatory steroid recently announced by Chas. Pfizer & Co., Inc., of Brooklyn, N.Y., is said to be three to five times more potent than cortisone. Another important advantage to the new drug is its relative freedom from side effects found in previous corticoids used in the treatment of rheumatoid diseases.

Pfizer markets this new pharmaceutical in novel oval tablets which are embossed with the Pfizer trademark. Special punches and dies were developed by Stokes, working in conjunction with Pfizer production personnel. The oval shape has a practical purpose as well, since scored tablets in this shape are more easily broken by arthritic patients when taking small doses.

*Trademark of Chas. Pfizer & Co., Inc.

Stokes pharmaceutical equipment is used to slug Sterane, granulate it and compact the drug into its final oval shape. This equipment is also used in the production of other pharmaceutical products sold under the well-known Pfizer label, including Bonamine*, a motion-sickness drug, Tetracyn*, a broad-spectrum antibiotic, and many other tabletted products.

From punches and dies to complete plant layout and equipment, Stokes' experience can help solve your pharmaceutical production problems. Write for your free copy of Catalog 601, describing the complete line of Stokes Pharmaceutical Equipment.

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OFFICES IN PRINCIPAL CITIES, REPRESENTATIVES THROUGHOUT THE WORLD

STOKES

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Marketing

There is no doubt in my mind that marketing is the superior science. All the research brains in the world will not distribute and sell at a profit the products of research. As a matter of fact most of the really good research men I know couldn't sell central heating to the Eskimos. The best production men and facilities in the world cannot distribute and sell the output of factories to ultimate consumers. I mention these truisms simply to emphasize that while we have devoted concentrated scientific attention to research and production methods, we have done little or nothing by comparison to put marketing on a scientific basis. By "marketing" I mean physical distribution of goods, control statistics, advertising, selling, sales promotion. In short the whole congeries of activities that takes goods out of the finished stock room and places it in the hands of the ultimate consumer. Behind all these activities are good records, particularly projection charts. Most firms still measure sales performance against what happened last year during a similar period; they do not measure performance against a statistical, or actuarial if you will, projections of the share of the market which they can get. Procter and Gamble has done a marvelous job of sales curve projection. We set quotas of course but the quotas are empirically established—usually last year's performance is taken and a percentage increase added. Most people don't know whether the percentage added is reasonable or completely inadequate. It's a guestimate. Not only is statistical information inadequate but so is the selection, training and guidance of sales personnel. In a market such as ours where the majority of products sold are duplicates of other similar products, it is obvious that sales can be built only by taking orders away from competitors. Therefore the important order to the salesman is not the one he got but the one he didn't get. The old time salesman was a flamboyant hot air merchant with a lot of brass and a bag of slick tricks. He did his job well in the days before radio and television, when everybody outside the large cities was considered an unsophisticated rube and often was. But that day has passed.

The salesman of today should be thoroughly trained not only in all the elements that relate to his products and his company but in applied psychology and the art of communication as well, and, supporting and guiding him, there must be a well-controlled plan in which all the contributory elements of marketing are coordinated.

Business Is Good

You may be interested to learn that I have been engaged as consultant on projects in the U. S. and abroad representing a total of almost 700,000 square feet of new pharmaceutical construction. A substantial part of this is composed of two new plants for Nicholas Products Laboratories: one plant in England comprises approximately a quarter of a million feet of space; the other in Australia comprises about two thirds as much. I have been consultant for this firm since 1947 and have worked also on plants that were built in Ireland, Indonesia and in France. "Aspro" is the internationally famous trade mark of this organization. The new plant of Nicholas Products (Aspro) now being built in Slough, Bucks, England, embraces more than a quarter million feet of space on a site of approximately twenty acres. The building includes warehouse, manufacturing and packaging areas for the company's several divisions as well as administrative and sales offices, employee amenities and recreation facilities. The employee amenities, office and laboratory facilities are housed in a two storey section which forms one end of the building proper. The main factory block is a flat-roofed, single storey unit having twenty feet clear headroom under the trusses. It is designed entirely for palletized handling. The packaging section has hung ceilings and soundproofing throughout. The factory building will

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TO SOLVE A LABELING PROBLEM!

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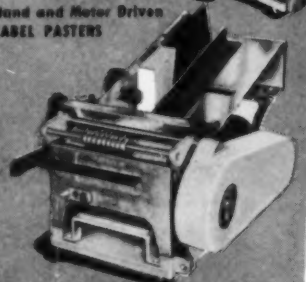
used in more drug and cosmetic plants than any other make

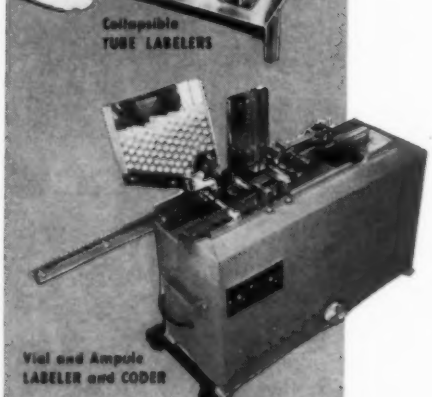
Hand and Motor Driven LABEL PASTERS



Semi-Automatic Feed LABEL PASTERS

LABEL ACTIVATORS for Thermoplastic Labels

Collapsible TUBE LABELERS



Vial and Ampule LABELER and CODER

Ideally suited for short-run production or for auxiliary use so as not to disturb a mass production set-up. Write for literature and details on **FREE TRIAL OFFER.**

Hand and Motor Driven LABEL PASTERS
Highly versatile, handles any shape label without adjustment. Dial control regulates paste flow, eliminating excess. Cuts stock loss. One machine can supply several operators. Available in 6"-8½" models.

Semi-Automatic Feed LABEL PASTERS
Quickly adjustable to all shapes of labels, from ½" to 7½" wide. Dial regulates paste flow. Speeds production up to 50%. Suitable as auxiliary unit in mass production operation. Leaves mass production equipment undisturbed.

LABEL ACTIVATORS for Thermoplastic Labels
Activates delayed tack, pre-coated labels quickly and evenly. Permanent labeling on glass, metals, plastics, fabrics, etc. No water or glue to smear product. Thermostatic heating control. Small and portable. Available for 6" and 12" widths. Motor driven.

Collapsible TUBE LABELERS
Applies 32 slip labels per minute to collapsible tubes. Automatically forms and ejects label on tube. Machines for ⅛, ¼, ½, 1 oz. tubes.

VIAL and Ampule LABELER and CODER
Thermoplastic labelers in 1, 2, 3, 5 and 10 c.c. sizes. Hopper automatically feeds vial or ampule for labeling and coding.

CUT CLEAN-UP TIME BY 50%

NEW POTDEVIN RELEASE-COTE

prevents coating materials from adhering to the walls of pots, tanks, rollers, shafts, feed tables and other exposed surfaces.

GENEROUS AMOUNT OF RELEASE-COTE SUPPLIED WITH ALL POTDEVIN COATING MACHINES.

POTDEVIN RELEASE-COTE available in quart, gallon and 5 gallon containers.

POTDEVIN MACHINE CO.

257 North Street Teterboro, N. J.

Specializing in Labeling Machines for over 60 years

contain one of the largest and most automatic tablet manufacturing and packaging departments in the world. The design of the plant is under the direction of Francis Chilson and Jeffreys Matthews and Partners are the architects. This plant is one of a series being built by the company throughout the world to accommodate rapidly expanding production requirements. The company is also rapidly growing great in the ethical, veterinary, proprietary and household products industries. All these companies of course operate under different names. But the thing that to me is important that this firm is large even by our standards and is growing like the proverbial green bay tree. It is unique in that the chairman of directors (the Big Shot in our language) is only forty-two and throughout the world not more than a half dozen important officials are fifty-five years of age or more. You'll be hearing a lot more about Nicholas in the future. "Sir John" Walmsley is resident American director for this firm.

Several years ago I designed for a French firm, Establecimentos Colliere, S.A., a plant, which was laid out along the lines I have been advocating in this column for twenty-five years. This plant was built in Santiago, Chile. Later on when the time came to expand the plant the expansion worked out so easily and with such little interference with production that the firm had an architect make an exact copy of the plant and this one was built in Peru. Now I have been engaged again to design a plant of some 60,000 sq. ft. for the same firm in Mexico City. Naturally I am as pleased as a petted pup that so many old clients are coming back with new projects after they have had experience with layout principles that have so thoroughly been proved out in practice.

Here at home I have again been engaged by another old client to handle the expansion of a plant, which I designed several years ago, and which, again proved out the principles I have so long advocated. In this case I replaced two multi-story plants with one single story job, which, although 35,000 square feet smaller than the two plants it replaced, had a predicted capacity of three times the combined capacity of the multi-story jobs. Experience showed that performance was actually better than the prediction. So now as the company moves rapidly on to higher levels of production, the main plant must be expanded and two new foreign plants must be designed and built.

High-Speed Rotary Tablet Machine

A completely new 10-ton high speed rotary tablet machine, Model 533, with production ratings ranging up to 2500 tablets per minute and capable of even higher output, has been introduced by F. J. Stokes Machine Company, Philadelphia, Pa. The new press can be utilized to handle a variety of industrial compacting operations, including ceramics, powder metals, and plastics preforming.

The new Model 533 press comes in two versions: one with 33 stations, which can make tablets up to a maximum diameter of 1-1/16 inches and 1-1/8 inches depth of fill at rates from 900 to 2500 per minute; the other with 27 stations which can make tablets up to a maximum diameter of 1-3/16 inches and 1-3/8 inches depth of fill at rates from 700 to 2000 per minute.

Tablet production rates higher than those cited have already been attained in field trials of the new machine, in circumstances where material consistency, depth of fill, and other factors offered the optimum in operating conditions.

The new Stokes press incorporates a number of exclusive advanced design features which make for greater flexibility of adjustment of operating conditions, easier and more precise control, and greater economy of maintenance.

Completely Automatic Strap Banding Machine

Autobinder, a completely automatic machine that straps and seals packages of varying sizes, has been released by A. J. Gerrard & Company, Melrose Park, Ill.

The new electrically-powered machine automatically applies and tensions the strap, makes and crimps its own seals, and cuts the strap. The operator controls the complete operation with one lever.

Depending on the size of the packages banded, the machine will make up to one thousand ties per hour. Packages of different size and contour can be banded one after another without adjusting the machine. Strapping tension can be adjusted easily in a matter of seconds. The Autobinder makes its own seals from a coil of special steel.

A reel for dispensing the 3⅜" x .015 steel strapping is furnished with the Autobinder.

Thirty-one inches in height, the new banding machine can be installed in production lines for added

speed in packaging. Any package with a minimum width of 7" and up to 22" x 20" can be strapped on the Autobinder. Operation of the Autobinder is such that it adapts itself easily to package manipulation and totally automatic operation by electric sequence controls.

Lilly Uses Fibre-Clad Trays for Better Materials Handling

Vulcanized fibre is often laminated to wood or metal when the combination of a smooth, durable exterior with a hard core is needed in industrial products.

This bonded construction is frequently found very useful for materials handling receptacles. The vulcanized fibre-clad wooden trays used by Eli Lilly Company, Indianpolis, offer an excellent example of the advantages of this type of materials handling container. Lilly uses these special Kennett trays, de-

signed and manufctured by the National Vulcanized Fibre Co., Wilmington, Del., for in-plant packing and transport of drug products manufactured in the company's Dry Products Finishing Department.

The Kennett trays offer excellent protection to the bottles before, during and after filling. Because the trays can be conveniently stacked after filling operations, full bottles can be quickly and safely transported to other processing sections. In addition, the fibre-clad trays are resistant to abrasion, hold their shape well, will not splinter, crack or dent, require no painting and can be relied on for long-lasting service.

Here's how Lilly uses these fibre-clad materials handling trays: Empty bottles are washed and placed in the receptacles which are stacked on floor dollies for transport to the filling department. There, bottles are filled with compressed tablets by an employee using a hand paddle which automatically picks up the correct number of tablets needed for each bottle.

Because vulcanized fibre surfacing is used on the trays, they are smooth, chemically inert, easily cleaned and durable, fitting them perfectly for the application. These properties of vulcanized fibre, and others, are the reasons why the complete line of Kennet receptacles from National Vulcanized Fibre Co.—trays, tote boxes, trucks, barrels and cans—are serving so successfully in thousands of materials handling operations throughout industry.

Counter-Current Liquid-Liquid Extractor

The Podbielniak CHEMIZON Centrifugal Countercurrent Solvent Extractor is one of the latest high capacity - high efficiency models constructed by PODBIELNIAK, INC., 341 E. Ohio, Chicago 11, for the petroleum, chemical and allied industries. This specific model is designed to process 500 gallons per minute combined streams of a chemical extraction system having difficult mixing and separating characteristics.

The rotor of this CHEMIZON is 42" in diameter by 42" wide and constructed entirely of type 316 stainless steel. The rotor cover is stainless and the base is stainless clad steel. Specially designed mechanical seals and heavy duty roller bearings lubricated by a forced feed recirculating oil system insure practically maintenance-free operation.

One of the many advantages of Podbielniak CHEMIZON Extractors is compactness. The extractor and drive unit together are only slightly larger than an office desk. This advantage becomes even more dramatic when comparing this CHEMIZON with a gravity column 10' diameter by 100' height required to accomplish equivalent results. Because of the compactness a premium quality extractor can be furnished in stainless steel at a competitive, or lower initial cost for production type extractor installations, when compared to bulky, carbon steel columns. High installation and erection costs for gravity columns are eliminated using the CHEMIZON, which requires no more than a simple concrete foundation.

A second obvious advantage of the Podbielniak CHEMIZON, closely coupled to compactness, is the extremely low material holdup required for continuous operation. For production applications handling 500-1000 gallons per minute the rotor material holdup is approximately 200-250 gallons. Equilibrium is established quickly with a minimum amount of "off stream product." These figures should be compared with gravity column operation where material holdup ranges from 40,000 to 50,000 gallons and several days are required to reach equilibrium. In several cases the savings effected in solvent inventory reduction have more than covered the initial cost of a PODBIELNIAK Extractor installation.

PODBIELNIAK Solvent Extractors can be furnished to handle capacities up to 1000 gallons per minute in a single machine. Each extractor is designed for the customer's specific system, and those variables which affect efficiency, capacity and general performance are thoroughly evaluated in laboratory and pilot plant machines. Accurate extrapolation of laboratory data 2500 times and more has been used in the design of production type machines. Following

SINCE 1895
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PNEUMATIC SCALE CORP., LTD.,
72 Newport Avenue, Quincy 71, Mass.
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STOKESWRAP

packaging assures impulsive sales appeal at low cost *Automatically*

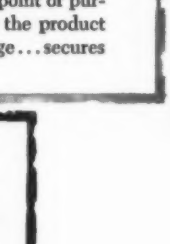
FACT #1

Modern retail merchandising demands packaging that sells at the point of purchase... that helps *display* the product ...*protects* it from damage... secures *attention* on the shelf.

FACT #2

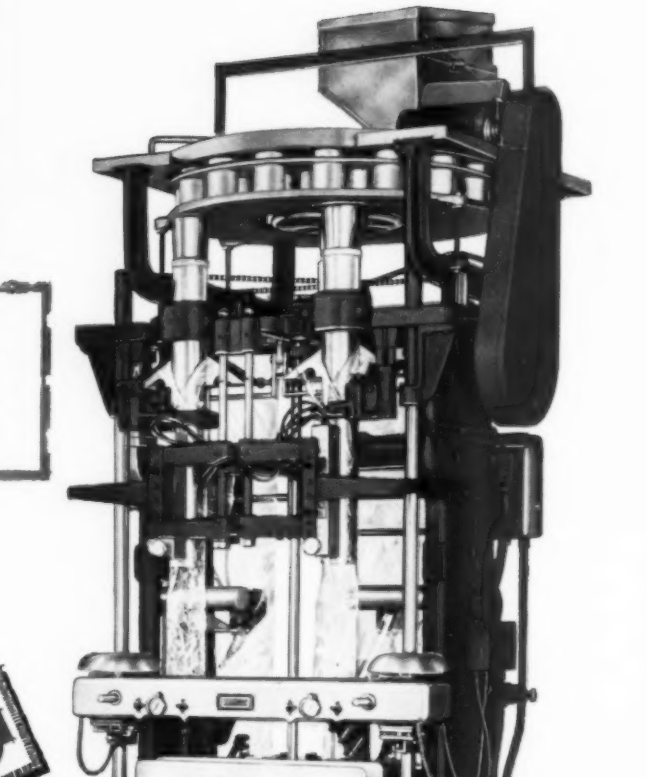
A Stokeswrap package gives your product its own *showcase*... couches it in an *attractive background*... styles it with *eye appeal* because...

Stokeswrap forms the package from almost any heat sealing material *preprinted as you desire,* fills it with a *precisely* controlled amount of product ...seals it against air and moisture... codes and tags the package if you wish ...*and it does all this automatically at speeds up to 140 per minute!*



FACT #3

General Mills, Inc., Hawley & Hoops, Inc., Bluehill Foods, Inc., Cook Coffee Co., Avon Products, Inc., and Proctor & Gamble use Stokeswrap to assure sales appeal. Many other leading manufacturers and processors of foods, nuts, candy, coffee, cosmetics and chemicals have solved their packaging problems equally successfully with Stokeswrap.



If your products are fighting for attention on the retailer's shelf, investigate Stokeswrap. Write today for your copy of the new 8-page catalog P-801 and discover how Stokeswrap eye appeal can help create more impulse sales for you!

STOKES & SMITH CO.

4912-O SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

Pacific Coast: SIMPLEX PACKAGING MACHINERY, INC., 534—23rd AVE., OAKLAND 6, CALIF.

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SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

this procedure, all PODBIELNIAK Extractor installations are sold on a performance guarantee basis.

PODBIELNIAK Centrifugal Solvent Extractors enjoyed a very intimate and important part in the development of the antibiotic industries, as known today. This, of course, is a distinction of which we are extremely proud. However, any belief that the PODBIELNIAK Extractor is suitable only for antibiotic systems, or those having similar characteristics, should be eliminated entirely. These machines are in extensive use in many vital industries such as: Aromatics, Vitamins, Flavors, Insecticides, Petrochemicals, Plastics.

Differential Scale Accurately Weighs Adhesive Materials

A new type automatic scale weighs sticky and non-free flowing materials as accurately as dry aggregate materials, according to an announcement made here today by Richardson Scale Co.

A differential scale, the new Richardson unit automatically and continuously delivers a selected amount of material, the weight of which is the difference between a fully loaded and partially loaded scale. Called a weigh-in and weigh-out scale, the new unit is made up of a weigher, dial scale and totalizer. The weigher, consisting of a weigh hopper mounted on a short belt conveyor, is suspended from levers terminating in the dial scale. The belt conveyor provides a live-bottom for the weigh hopper, and facilitates the discharge of the hard-to-handle material.

Heart of the system is the electronic controls. These instruments govern the differential weighing process, and the conversion of weight from analog to digital indication.

Although it will handle any dry aggregate material, the scale is particularly suitable for weighing adhesive materials that cannot be weighed accurately by conventional scales. Adhesive materials tend to cling, stick and build up on walls and surfaces of conventional scales, which makes accurate weighing difficult.

Suitable for either receiving, shipping or delivering material to a process, the weigh-in and weigh-out scale handles all types of non-free flowing materials, including chemicals, pharmaceuticals, foods and cosmetics.

How It Works—To start a weighing cycle, the operator feeds material into the weigh hopper by pushing a start button located on a remote panel board. (Assume 1,000 lb. batches are to be discharged by the scale and the pre-set tare load is 100 lb.) As the hopper is being loaded the dial scale pointer moves up and around the dial until 1,100 lb. of material is shown to have been deposited in the hopper. Feeding then stops.

After the dial pointer steadies itself momentarily, the belt on the weigher goes into operation, discharging material as it moves. As material drops from the weigher, the scale pointer moves back down the dial until the 100-lb. tare load has been reached. At this point, the belt stops, and the required 1,000 lb. of material has been discharged.

The totalizer, which may be located next to the dial scale, or remotely, indicates this weight. The cycle then automatically repeats itself. The totalizer after each weighing shows the total weight of material discharged by the weigher.

A servo unit drives the totalizer, which adds up every graduation traversed by the dial pointer as it returns to tare load. The totalizer, which converts the analog motion of the dial pointer to digital indication, is actuated during the discharge period only. A dial head printer is available to give a permanent record of the individual weighings.

The scale's control panel contains the totalizer, operating pushbuttons, and multi-colored pilot lights that indicate the progress of the weighing cycle. It also contains jog buttons for operating the system manually. The manual feed jog button can be used to accumulate a residue of material on the conveyor belt. The discharge jog button enables the operator to empty out the system completely.

Features of the belt conveyor include a scraper on the underside to keep material from building up on the belt, a regulator device that adjusts the depth of the material on the belt, and adjustments for belt tension and take-up.

For additional information write or call Richard Steensma, Richardson Scale Co., Van Houten Ave., Clifton, N. J.

Automatic Suppository Machine

Pharmaceutical and Chemical Industry Supply Corp., New York, announces production of the Model G, "Automatic Suppository Moulding Machine," which has an output of 12,000 to 20,000 suppositories an hour, depending upon the suppository base which is used as well as the weight of the suppositories.

All operations including cleaning and lubricating the molds are fully automatic. Only one operator is required to supervise operation and inspect the finished product. The temperature of the cooling channel, hopper, and scraper are regulated by a thermostat to assure perfect shaping of every suppository. Capable of producing two types of suppositories simultaneously, the Model G is also adjustable from one size of suppository to another. A plexiglass cover permits easy inspection of molds and suppositories during filling, scraping, and cooling.

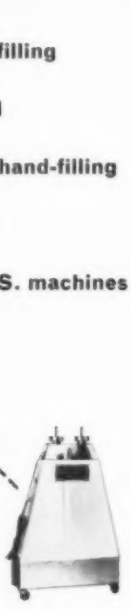
The room requirements for the machine are as follows: Length: About 12 to 13 feet, Width: About 2½ feet, Height: About five feet, Weight: 1750 pounds. The power requirements for the machine is three H.P.

Complete details are available from Pharmaceutical and Chemical Industry Supply Corp., 16 Hudson Street, New York 13, N. Y.

LOOK TO US FOR EVERY LIQUID FILLING REQUIREMENT

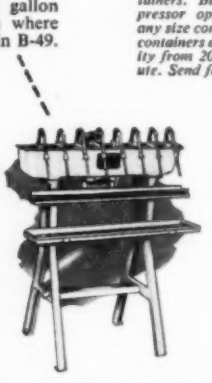
and profit by more than two generations of liquid filling experience. The U.S. line covers a wide range of liquid filling machines for automatic, semi-automatic and hand-filling operations. With this wide choice of Fillers, you need not compromise your production to fit a machine; instead, basic U.S. machines are custom-engineered to fit your specific production . . . and usually at a saving.

MODEL B-49 STRAIGHTLINE VACUUM FILLER for liquids and semi-liquids. Most automatic one-operator multiple filler. Operates with or without discharge conveyor. Filling proceeds automatically while empties are loaded. Easy operating lever activates container feed and discharge; otherwise operation is completely automatic. Adjustable for AGST to gallon size finishes. A dependable machine where filling cost is a factor. Send for Bulletin B-49.



E-Z AIR CLEANER— Popular companion to semi-automatic fillers for products that require a clean, dry container. Connects to air supply to blow carton lint and dust out of new containers. Built-in air compressor optional. Handles any size container. Cleans 2 containers at a time. Capacity from 20 to 40 per minute. Send for E-Z Bulletin.

MODEL B-2 VACUUM FILLER provides efficient continuous production, filling two containers at a time. Handles a wide variety of liquids and semi-liquids. Has automatic product supply; vacuum is adjustable and flow regulated for accurate, clean filling. For containers up to 4½" dia. round or rectangular. Send for Bulletin B-2.



THE U. S. SIPHON FILLER is a highly efficient machine. Stainless steel filling tubes and glass lined tank. Handles all types liquids; all containers. Fills without overflow or spillage. Send for the Siphon Bulletin.

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Specialists in Liquid Filling and Container Cleaning Equipment

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Portable Vial Filler

The Filamatic Model AB-5 vial filler is used at Cutter Laboratories (among other firms) filling Normal Serum Albumin into 60cc vials. The Serum Albumin is drawn from a sterile, pressurized tank by the Filamatic and dispensed into the vials by the operator. Filling rate is 2,000 per hour.

The Filamatic is completely portable and the entire filling mechanism is readily removed for cleaning or sterilizing by simply loosening two thumb-screws. This feature permits rapid changeover for filling other products.

Improved Vacuum Bottle Filler

The Ertel ESA Vacuum Bottle Filler is widely used in the chemical, cosmetic, and pharmaceutical industries for filling small bottles, and has become well accepted for its efficiency. Now the Ertel Engineering Corporation, Kingston, New York, has announced an improvement on this already successful machine, one that will extend its operations. The ESA is now available with a conveyor attachment which eliminates breaks in the filling operation. The conveyor feeds the bottles to the filler and discharges them after filling, sending them on to the capping and labelling section.

The new conveyor is driven by a ¼ horsepower motor and the conveyor speed can be regulated by a variable speed drive as desired. It runs smoothly and reliably.

Like the rest of the machine, the conveyor is constructed of sturdy steel sections, making it as durable as it is efficient. This new improved version of the well-known ESA Vacuum Bottle Filler is sure to solve many production tie-ups by keeping the operation running evenly, without interruptions. It should be an integral part of any modern production line.

Servotherm* Infrared Radiation Pyrometers

A new four-page brochure describes two infrared radiation pyrometers. By the *remote* detection of infrared radiation, these instruments measure temperature variations without direct contact or interruption of the process under control. There are no false signals nor is the equipment rendered inoperative by comparatively high ambients.

The IR-2 is an industrial instrument designed for temperature measurement (and thereby control) of moving objects in process as well as the location of hot spots in inaccessible equipment. Covering a nominal temperature range of 50° C. to 1000° C., it may be used in an automatic control system or as an aid to manual measurement and control. The equipment may be installed at a key site or transported from spot to spot.

The IR-1 covers a nominal temperature range of ambient to 1000° C. With greater collecting area and a response ten times as fast as the IR-2, it is eminently suitable for very fine measurements. As a control instrument it is outstanding for processes requiring high sensitivity near ambient.

Manufactured by Servo Corporation of America, 20-20 Jericho Turnpike, New Hyde Park, L. I., New York.

Imprints Label on Cans at High Speed

Imprinting variable data such as color, batch number and content directly on lithographed or preprinted cans or other cylindrical containers can now be done rapidly and economically with a new Markem machine. Designed to replace paper labels and to reduce costly inventories of fully lithographed containers, the new machine permits imprinting specific legend in quantities as required.

The Markem Model 70AF machine is quickly adjusted for marking cans ranging in size from 1/32 to one gallon. Operating speed up to 1500 imprints per hour. Maximum imprint area measures 2″ x 6″.

Imprinting is done as a sliding carriage, which holds the container, is moved from right to left. After imprinting, can is manually removed or ejected onto a conveyor. Printing element, inked as carriage returns to right, consists of a Markem masterplate with insertable type or rubber plate. Either is easily changed when imprint requirement changes.

Complete specifications and data on the Markem 70AF machine are available on request from Markem Machine Co., Keene 52, New Hampshire.

Machine Addresses Cases Automatically

A new modification of its Markoprinter imprinting machine to permit its use for automatic, high-speed addressing of shipping cases, has been developed by Adolph Gottscho, Inc. The new model is designed to accommodate quick-change printing dies and is adjustable for various sizes of cases. It is completely automatic and requires no attention except for changing address dies.

The new unit is designed to fill the need of quantity shippers for an efficient method of handling large numbers of the same size shipping cases destined for the same address. In application, cases ready for shipment to a single address are grouped together, and fed into the machine. The address is imprinted automatically on the cases and they are then discharged to a conveyor, pallet, tote box or basket. The address die is then changed and the next grouped shipment is fed through. In this way very large quantities of cases can be handled without confusion or delay.

Further information about the "addressing model" Markoprinter machine may be obtained from Adolph Gottscho, Inc., Hillside 5, N. J.

* T. M. Reg.

A. H. Krogg

. . . for 37 years in charge of all granulation and compression operations at

STRONG-COBB COMPANY, INC.

comments:

"In our business, versatility is the factor which governs the success of our operation. Therefore, when we choose high-speed production equipment, geared in capacity to our constantly expanding production schedules, we have to think, also, of its versatility—the ease and economy with which it can be changed over from one job to another with minimum down time."

It is significant that the highly-efficent Strong-Cobb plant in Cleveland, one of the best-known high-production plants in the country, has one of the largest Colton installations.

If you need high production with versatility in tableting, we invite your inquiry.

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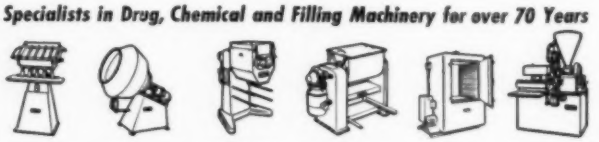


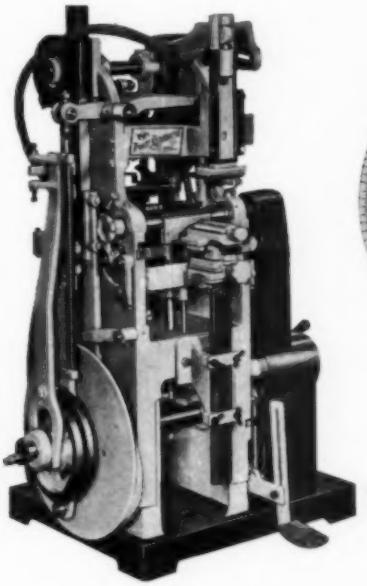
TABLET COUNTERS | COATING STANDS | GRANULATORS | MIXERS | OVENS | MULTI-TUBE FILLERS

The NEW Installations are COLTON

The ONE LABELER that handles all containers!

Time and again this versatile labeling machine solves problems that baffle others. Registers precisely on panels, in recesses, and on curves . . .

TWO JOBS IN ONE OPERATION! The Pony Labelrite applies a three-side label that also seals the container . . .



Accurate labeling that exactly fits the recess in bottom of the plate.

No matter how different your *next* product may be in shape or style of label, the production man, as well as the Sales department *knows* it can be handled on the equipment you already have . . . if its

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Ask to see the Movies!

536

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AUTOMATIC LABELING • PACKAGING — PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

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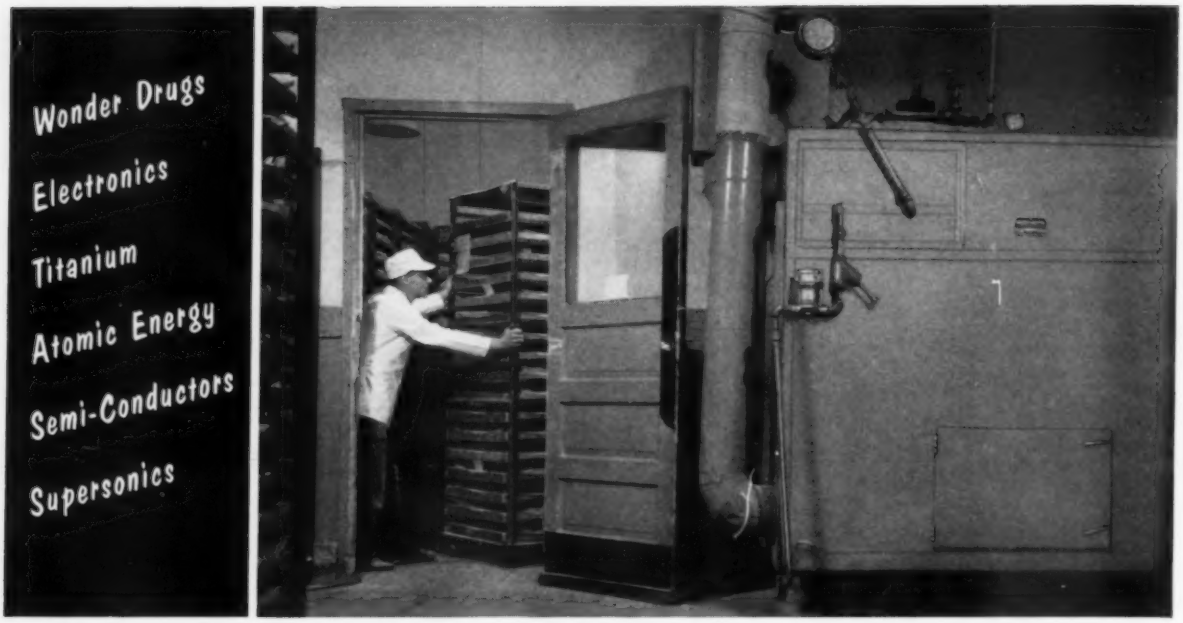

This 19-year-old Lectrodryer still maintains 15% relative humidity here

Think of an ultra-modern process and you'll find

DEHUMIDIFICATION

becoming a vital factor there

ATMOSPHERES surrounding a material or entering into all of these processes must be DRY; dewpoints below —100°F. aren't unusual in our ultra-modern thinking. Raw materials feeding to a reaction may contain only a few parts of moisture per million. Such DRYness is brand new thinking to many engineers and scientists, but it's an old story to Lectrodryer* engineers.

Time was when refrigeration gave a dewpoint low enough for many operations. It's still a big help in catching that first moisture "off the top", but it takes a Lectrodryer to DRY air, gases and organic liquids to the low degree these ultra-modern processes demand.

Nineteen years ago the air-drying Lectrodryer shown here went to work at Strong Cobb & Company in Cleveland, maintaining 15% relative humidity in this tablet conditioning room. It has made that important operation independent of outside weather conditions ever since—a service duplicated in dozens of industries all over the world.

Lectrodryer engineers will help plan your installations to assure adequate, economical DRYing. Lectrodryers are, in most cases, ready to run when they reach your plant; simply set them in place, connect up steam or gas and power. These Type CH machines need almost no maintenance, since there is only a single, slowly revolving shaft.

The book, *Because Moisture Isn't Pink,* illustrates many of these DRYing jobs. For a free copy and other help, write Pittsburgh Lectrodryer Corp., 309 32nd Street, Pittsburgh 30, Pennsylvania.

In England: Birlec, Limited, Tyburn Road, Erdington, Birmingham.
In France: Stein et Roubaix, 24 Rue Erlanger, Paris XVI.
In Belgium: S.A. Belge Stein et Roubaix, 320 Rue du Moulin, Bressoux-Liege.

LECTRODRYERS DRY
WITH ACTIVATED ALUMINAS

LECTRODRYER

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The Fast Automatic Crandall Counter is IDEAL for Producers of Tablets, Pills or Capsules

Here's Why!

The Crandall . . . 1. handles practically all types of coated or uncoated tablets, pills and capsules
2. can be equipped for any count
3. handles bottles, cans or cartons
4. runs at speeds up to 60 bottles of 100-count per minute—faster where counts are lower
5. can be equipped for automatic or semi-automatic operation

The original Crandall Tablet Counting Machine is manufactured *only* by **US.**

. . . and here is an important added feature—

The Crandall can handle several different products simultaneously. By dividing the hopper, the Crandall can count several products at the same time. Thus, if you are making small volumes of a variety of products, you can set up the Crandall to suit your exact requirements with a minimum of effort.

Full details are yours for the asking. Write today.

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Carton Sealing, Lining,
Wrapping, Box Making

Compounder's Corner

Polyoxyethylene Emulsifiers

In recent years emulsifying agents related to the polyoxyethylene glycols have found increasing application in the formulation of commercially prepared oil-in-water creams. The particular virtue of this class of compounds lies principally in their non-ionic nature which makes them far more resistant to extremes of *p*H and to high salt concentrations than are the anionic agents.

There are many kinds of non-ionic emulsifying agents now available, but of those based on the polyethylene glycols the more important at the present time according to C. A. Johnson (*Pharm. J.*, p. 53, July 16, 1955) may be classified into three broad groups, namely:

Hexitol anhydrides in which one or more of the hydroxyl groups are esterified with a suitable fatty acid and polyethylene chains have been added to the remaining non - esterified hydroxyl groups. An example of this kind of compound is polysorbate 80.

Condensation products of a suitable fatty alcohol, such as cetostearyl alcohol, with ethylene oxide, which adds to form a polyethylene chain of the required length. These compounds have an ether linkage and are therefore very resistant to chemical attack. The products made from cetyl or cetostearyl alcohol have been given the name of cetomacrogol followed by a number which is indicative of the approximate molecular weight of the polyethylene chain.

Mono-esters of polyethylene glycols with a suitable fatty acid. This kind of compound may be prepared either by addition of ethylene oxide to the fatty acid until the increase in weight observed indicates that the desired chain length has been achieved, or by esterification of a suitable polyethylene glycol with the fatty acid. Since they contain an ester linkage these compounds are more prone to chemical attack than are the ethers. The approved name ascribed to the esters is macrogol followed by a number indicative of the approximate molecular weight of the polyethylene chain and concluding with an indication of the particular fatty acid used. For example, polyethylene glycol 400 monostearate would be known as macrogol 400 monostearate.

All these compounds depend for their emulsifying ability on the maintenance of a suitable balance between the hydrophilic and hydrophobic portions of the molecule. The latter portion is constituted naturally, e.g., the fatty acid or fatty alcohol part of the molecule, while the polyethylene chain terminating in a free hydroxyl group constitutes the hydrophilic portion. It is clear, then, that the longer the polyethylene chain the more hydrophilic does the substance as a whole become, and a modification of the chain length brings about a corresponding modification in the properties of the emulsifying agent. The polyethylene glycols (macrogols) themselves have, of course, no emulsifying powers, since they have no hydrophobic grouping, but they are used as stabilizing agents and to increase viscosity.

Oral Suntan

Certain psoralen derivatives when applied to normal skin which is then exposed to sunlight will cause an inflammatory response followed by tanning. In fact, the presence of psoralens in bergamot and expressed citrus peel oils may well be the cause of the pigmentation of berlocque dermatitis.

A specific compound, 8-methoxypsoralen, has been used with some degree of success in treating vitiligo, in which the skin exhibits unpigmented patches. Local application of the compound, or administration by mouth or a combination of both forms of administration, in a certain proportion of cases results in repigmentation of the light colored patches. Results of the treatment are erratic, however.

A. B. Lerner (*J. Invest. Dermatol.* 25:1, 1955) administered a daily small dose of 8-methoxypsoralen to a normal subject who ordinarily acquired a dark suntan by the end of the summer. In this instance, however, a few days after beginning treatment with psoralen compound—very early in the summer—the subject's skin acquired the suntan that was customary by the end of other summers, and by the end of the season he became darker than ever before. The tan faded as usual during winter. In a series of patients with vitiligo who worked outdoors during the summer, administration of 8-methoxypsoralen resulted in more rapid darkening of normal skin areas following exposure to light.

Comment: This compound causes occasional systemic side-reactions, so that it can be administered only under the supervision of a physician and certainly is not ready for over-the-counter distribution. Nevertheless, it points a way to alteration of skin properties.

Vanishing Creams

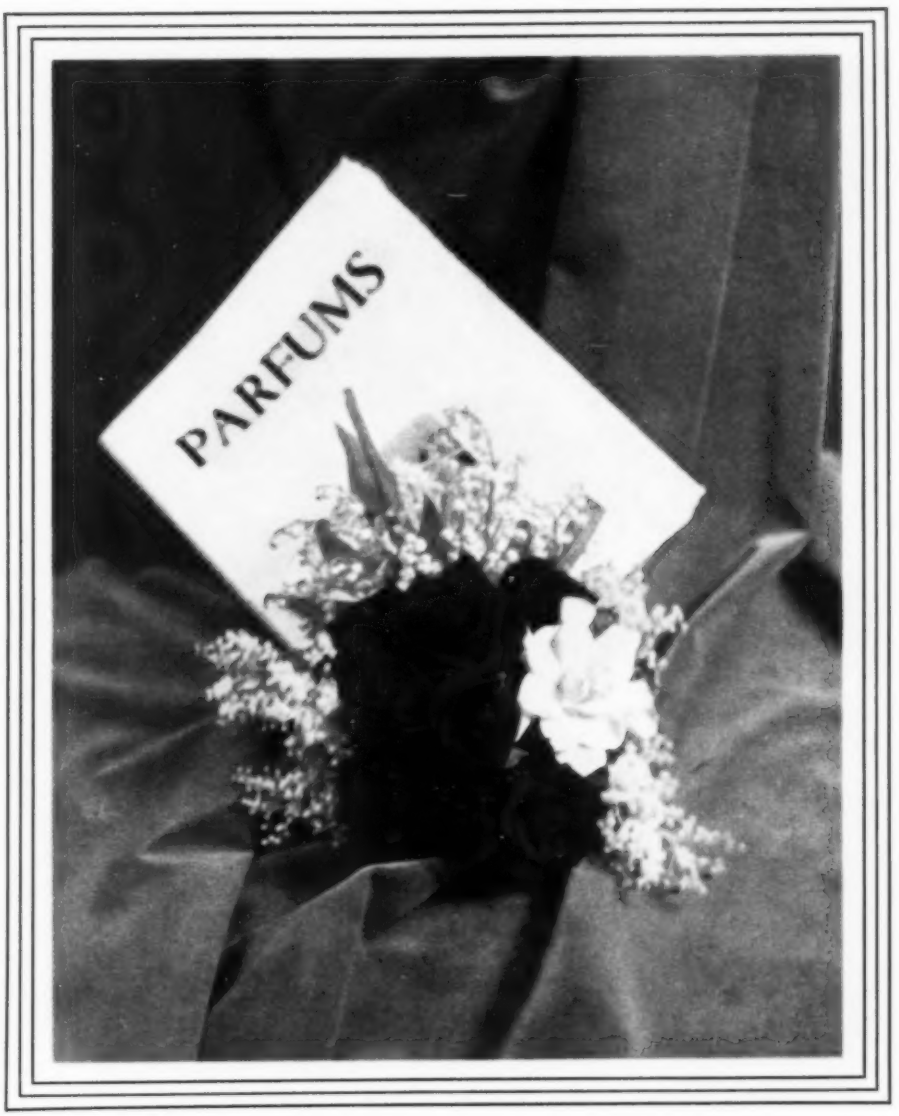
Vanishing creams, as described by V. Vasic in *P. & E. O. R.* 46:147, 1955, which are based on stearic acid, can be emulsified by either ionic or nonionic emulsifiers. They usually contain from 13 to 25 per cent of stearic acid, 15 to 30 per cent of this amount being saponified. The various alkalies used include potassium and sodium hydroxides, potassium and sodium carbonates, triethanolamine, borax and aqueous ammonia. In most cases more satisfactory creams are produced by the use of alkali mixtures rather than from a single one. Two types of soap give greater stability than either alone.

Potassium hydroxide is a popular alkali for use in stearic creams. The emulsion made with potassium hydroxide is easy to manipulate and creams produced have a fine texture whose properties may be varied with the amount of alkali used. Potassium hydroxide usually produces softer creams with plenty of "sheen."

One part of potassium hydroxide will combine with five parts of stearic acid to produce six parts of soap.

Stearic acid	13.0
Spermaceti	1.0
Almond oil	1.0
Stearyl alcohol	0.9
Glyceryl monostearate	1.0
Mineral oil	0.5
Propyl p-hydroxybenzoate	0.2
Glycerin	4.0
Water	73.0
Potassium hydroxide	0.4

Sodium hydroxide should not be used alone for the saponification of stearate



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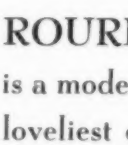

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vanishing creams. It produces too hard creams and soda soaps do not have holding power for water and oil. In combination with other alkalies, sodium hydroxide produces very satisfactory creams and it is especially useful when it is required to increase the hardness of cream. One part of sodium hydroxide will combine with seven parts of stearic acid to produce eight parts of soap.

Stearic acid	16.00
Glyceryl monostearate	3.00
Cetyl alcohol	1.00
Almond or Olive oil	1.00
Mineral oil	1.00
Propyl p-hydroxybenzoate	0.20
Propylene glycol	6.00
Water	71.44
Sodium hydroxide	0.16
Potassium hydroxide	0.20

Potassium carbonate is a very good emulsifying agent for production of stearate vanishing creams. It gives creams of perfectly smooth appearance which are indefinitely stable. Sodium carbonate gives less smooth creams but they are also stable.

Potassium and sodium carbonates have some disadvantages as emulsifiers for vanishing cream. They are not easily handled as they effervesce during saponification process of the stearic acid and liberated carbon dioxide is difficult to expel. If liberated carbon dioxide is not expelled completely the cream will sink badly. In addition, it takes a higher temperature and a much larger vessel to make the batch. But properly manipulated, it is possible to get excellent creams with practically complete expulsion of the carbon dioxide.

Very good results are much easier to obtain if a part of potassium carbonate is replaced by borax, triethanolamine or sodium hydroxide.

One part of potassium carbonate, anhydrous, combines with four parts of stearic acid.

Stearic acid	16.00
Olive or almond oil	1.60
Glyceryl monostearate	0.50
Mineral oil	1.00
Propyl p-hydroxybenzoate	0.20
Glycerin	7.50
Water	72.00
Borax	0.70
Potassium carbonate, exsicc.	0.50

Triethanolamine produces the creams which are only very slightly alkaline, and which develop excellent sheen, but are rather soft. The consistency of the cream can be adjusted by incorporating a proportion of sodium hydroxide. Creams made with this alkali however tend to darken somewhat with age. This discoloration may be prevented if strict attention is given to the absence of metallic contamination, especially iron, suitable perfumes are chosen and the cream protected from excessive exposure to light.

One part of triethanolamine combines with approximately two parts of stearic acid to make three parts of soap. Triethanolamine soap has the properties of being completely oil soluble, and this tends to increase the stability of creams made with it and emulsification and saponification proceed very easily to completion.

Stearic acid	13.0
Cetyl alcohol	2.0
Lanolin	2.0
Mineral oil	1.0
Propyl p-hydroxybenzoate	0.2
Propylene glycol	9.0
Water	72.0
Triethanolamine	1.0

Borax gives a white cream, is easy to work with, but the cream tends to grain. However, borax used in combination with potassium hydroxide, potassium carbonate or triethanolamine gives the creams which possess very good stability, very good texture and distinguished by excellent whiteness.

One part of borax will combine with 1.4 parts of stearic acid.

Stearic acid	16.0
Cetyl alcohol	0.6
Glyceryl monostearate	0.5
Almond or olive oil	2.0
Mineral oil	1.0
Propyl p-hydroxybenzoate	0.2
Water	70.4
Glycerin	8.0
Triethanolamine	0.6
Potassium carbonate, exsicc.	0.6
Borax	0.1

Vanishing creams saponified with ammonia are in a freshly prepared state of excellent and snow-white appearance but when exposed to the air for any length of time they have the tendency to darken. Using very pure raw materials, the lowest possible amount of perfume and filling the cream into airtight containers (collapsible tubes) this inconvenience may be avoided, but this appears very difficult under the normal conditions of cream production and perfuming.

Concentrated ammonia solutions should be avoided because, even after prolonged heating of emulsion, the ammoniacal odor is retained. Using diluted ammonia solutions, not higher than seven per cent, a smooth emulsion with nice appearance can be obtained and the ammoniacal odor is absent.

Ammonia produces the creams which have a pronounced emollient action on the epidermis and especially on the beard. Ammonium stearate creams, therefore, are specially indicated for the manufacture of brushless shaving creams.

One part of aqueous ammonia of 0.91 specific gravity corresponding to 25 per cent of ammonia content should neutralize approximately four parts of stearic acid to make five parts of ammonium stearate soap.

The number of non-ionic emulsifying agents which can be used in the formulation of a vanishing cream is very great. Vanishing creams emulsified by non-ionic emulsifiers have some definite advantages over the creams saponified by soaps. The main advantages are; Non-ionic emulsifiers can produce vanishing creams which show a markedly increased resistance to freezing and high temperature.

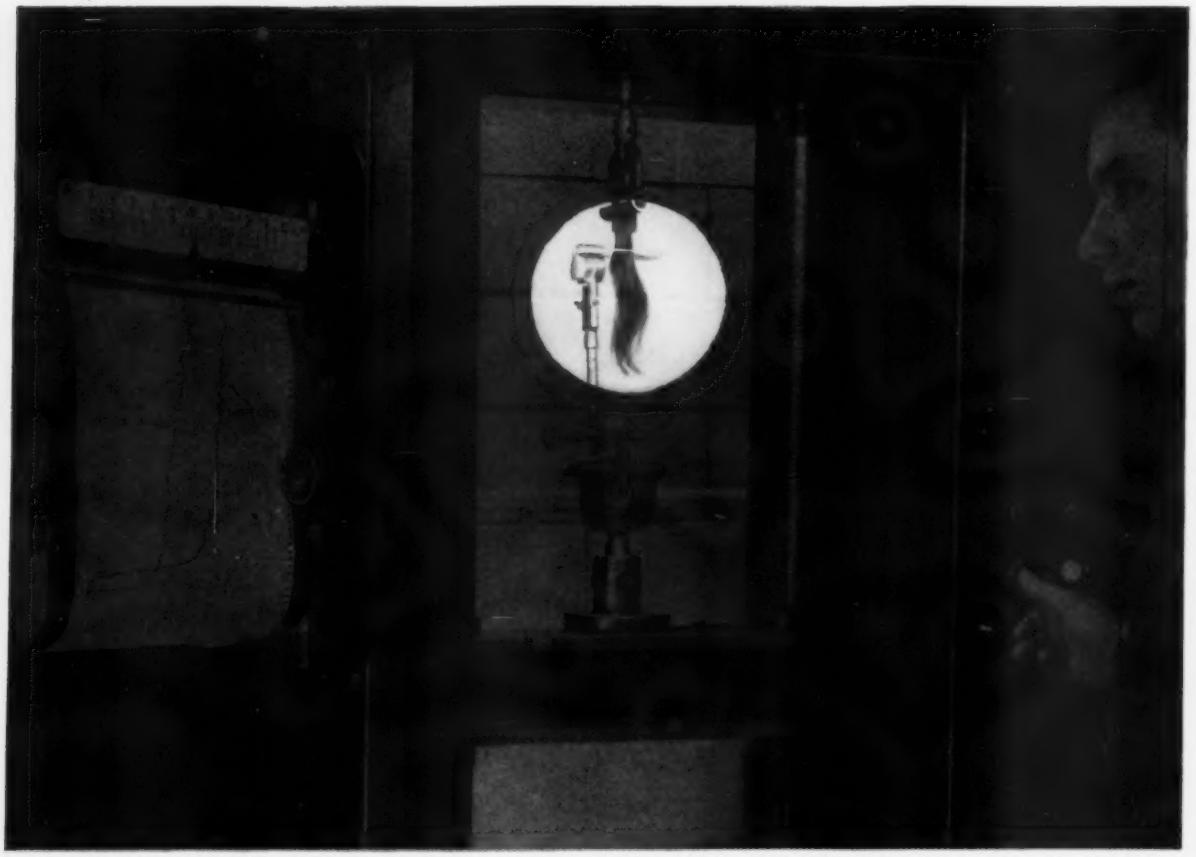
Soap and Detergent Dermatitus

Fifty-seven cases of hand dermatitis which were attributed by the patient to soaps and detergents were appraised etiologically by J. J. Jambor and R. R. Suskind (*J. Invest. Dermatol.* 24:379, 1955). A systematic effort was made to determine the role played by the soaps and detergents as sensitizing agents. It was evident from the results that soaps and synthetic detergents did not act as sensitizers in any of the cases. In this series, no attempt was made to determine whether they acted as primary irritants. Factorial analysis of the cases resulted in the detection of the principal or primary etiologic factor in 30 per cent of the cases. These included chromate, nickel, lathe coolants, petroleum fractions, FD&C dyes, lanolin.

Premenstrual Tension

A clinical trial of ethisterone and of mephenesin, alone and in combination, for the treatment of premenstrual symptoms was carried out by G. I. M. Swyer (*Brit. Med. J.*, p. 1410, 1955) by means of a random block design, whereby the effects of the various treatments could be compared with each other and with those due to a placebo.

While mephenesin produced complete relief more often than ethisterone, an overall analysis suggests that there is little to choose between them.



Instron Tensile tester proves that more force is required to pull a comb through washed, untreated hair than through hair washed and then treated with TRITON X-400 solution. The right-hand curve on the chart indicates load necessary to pull comb through clean, untreated hair. When the tress is washed and treated with TRITON X-400 solution the load is reduced to the level shown by the left-hand curve being recorded for the test in progress.

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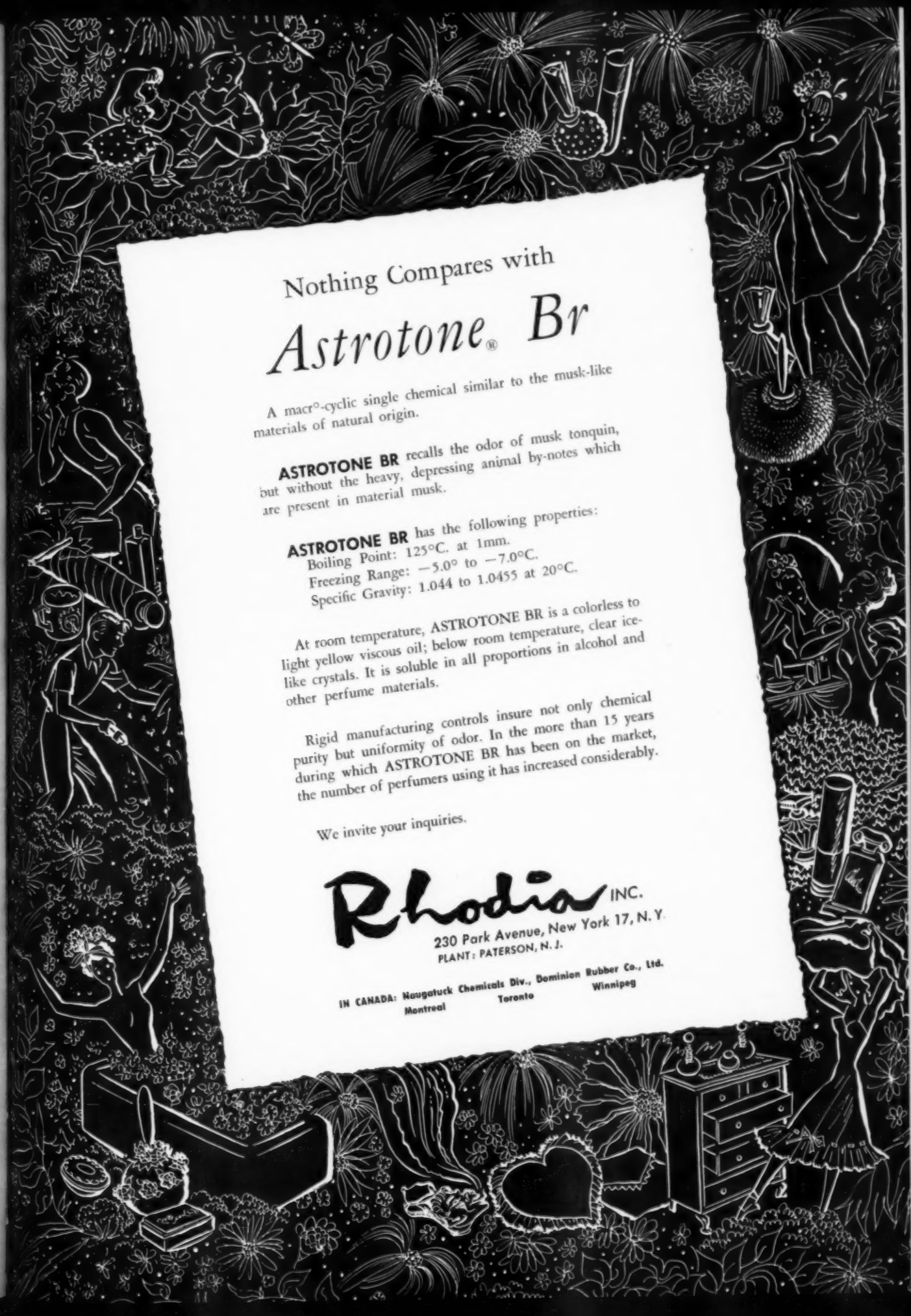

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Type & Name	Properties and Uses	Solubility	Crystal Micron Size	Melting Point	Moisture Content
RIBOFLAVIN U.S.P. Roche Regular	Density and low electrostatic properties, plus virtual non-hygroscopicity provide easy handling in preparing powdered dietary supplements, pharmaceutical tablets, soft gelatin capsules and dry enrichment premixes.	0.140-.200 gram. per liter (See Note 1)	Under 20	275°-280°C.	0.8-1.5%
RIBOFLAVIN U.S.P. Roche Solutions Type	For use in parenteral solutions which approach or slightly exceed the maximum solubility of B_2. Less likely to crystallize out.	0.120 gram per liter (See Note 1)	Under 20	285°-290°C.	0.2-1.5%
RIBOFLAVIN-5'-Phosphate Sodium-Roche **Theoretical B_2 content: 73%** **Roche product: 70-73%**	Preferred for all solutions. Solubility properties allow high concentrations without use of solubilizers (See Note 2). Better taste; no bitter aftertaste as in riboflavin. Specially valuable for highly concentrated oral and parenteral multi-vitamin solutions (with or without ascorbic acid), elixirs, syrups, water-dispersible multivitamin formulations in gelatin capsules, tablets, lozenges.	Depends on pH (See Note 2)	Very fine crystal	Decomposes above 200°	Small percentage of water of crystallization

Note 1 In water at room temperature after shaking with excess for 24 hours.

Note 2 Solubility in water varies with pH as shown in table at right:

pH	Solubility
3.8	43 mg. per cc.
5.6	68 " " "
7.0	112 " " "

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Advancing Therapy

Stimulant Drug

More than 100 mentally sick women have benefited from treatment with a new stimulating drug, Dr. John T. Ferguson of Traverse City State Hospital, Md., reported at the American Society of Pharmacology and Experimental Therapeutics meeting in Iowa City, Iowa.

The drug is trade named Ritalin by its manufacturer, Ciba Pharmaceutical Products Inc. of Summit, N. J. It is known generically as methylphenidyl-acetate.

Dr. Ferguson gave it to 127 women patients between the ages of 20 and 73. They had spent an average of 16 years in various institutions and hospitals because of the severe mental sickness, schizophrenia. After treatment with Ritalin, 101 of the patients showed generally improved behavior, increased control over physical activities, and "an awakening to reality."

Of the 101 improved patients, 79 needed no further treatment after results first became evident.

Scientists do not yet understand exactly how Ritalin produces these rapid changes in mentally ill patients, but it is believed to be the result of over-all chemical and physiological activity stimulated by the new drug.

Science News Letter, September 17, 1955

Oral Hygiene and Antibiotics

Oral lactobacilli differ greatly in their sensitivity to different antibiotics, according to studies by S. Dreizen, J. J. Mosny, E. J. Gilley and T. D. Spies (*J. Am. Dental. Assoc.* 51:338, 1955). When compared on a basis of per unit weight, erythromycin was most effective as an inhibitor of oral lactobacilli followed in decreasing order by penicillin, oxytetracycline and chlortetracycline. Streptomycin and dihydrostreptomycin were ineffective in the concentrations used.

Oral lactobacilli differ greatly in their sensitivity to different concentrations of the same antibiotic. In a survey of 235 previously unexposed cultures of oral lactobacilli, the minimum inhibitory levels of penicillin G potassium ranged from 50 micrograms to over 500 micrograms per 10 ml. broth.

Oral lactobacilli can develop a tolerance to inhibitory concentrations of penicillin, erythromycin, oxytetracyline and chlortetracycline when exposed repeatedly to subinhibitory levels of these antibiotics. This occurs less frequently in the presence of penicillin than in the presence of erythromycin, chlortetracycline and oxytetracycline.

Dihydrocholesterol

Dihydrocholesterol is available from the Special Chemicals Division, Winthrop-Stearns Inc.

Interest in dihydrocholesterol has been stimulated recently by a series of investigations showing that the compound acts as an antimetabolite for cholesterol. When included in the diet of laboratory animals, it was found, it tended to decrease the amount of cholesterol in the blood and in various other body organs.

Ambonestyl

Ambonestyl, diethylaminoethyl isonicotinamide, is the pyridine analog of procaine amide and seems to possess certain advantages in controlling faulty cardiac rhythms when tested in animals. B. B. Clark and E. Etstein (*N. E. J. Med.* 253:217, 1955) tested the compound in human beings and found indications that it may have some advantages over procaine amide and quinidine in the treatment of irregularities in heart action. The new compound can be administered rapidly and in large amounts for emergency treatments and has a margin of safety that would permit its use in patients undergoing cardiac surgery.

Treating Parkinsonism

The correct management of patients suffering from Parkinsonism in all its forms still remains one of the most difficult problems in therapeutics. Many so-called "spasmolytic" agents have been tried in this condition with variable success. The advent of a new compound with pronounced anti-acetylcholine activity was felt to be of considerable interest as a possible addition to the range of drugs available for the alleviation of the distressing symptoms of the Parkinson syndrome.

The new compound (B.S. 5930) is β - dimethylamino - ethyl - 2 - methylbenzhydryl hydrochloride. Investigations into substitution in the benzhydryl group gave the rather unexpected result that substitution of a methyl group at the ortho (2) position produces a very much increased anti-acetylcholine effect and a very much reduced antihistamine action.

The toxicity of B.S. 5930 is about the same as that of diphenhydramine. In a carefully designed study, R. O. Gillhespy and A. H. Ratcliffe (*Brit. Med. J.*, p. 352, Aug. 6, 1955) determined that 43 of 67 patients had derived benefit from treatment and 31 were better than on any other previous treatment, so that the drug was a useful addition to the limited number now available.

The paper describes in detail a new method of carrying out clinical trials that emphasizes the aspects of clinical experience without overlooking, but without undue emphasis on statistical analysis.

New Antihistamine

A new antihistamine, 1-methyl-4-amino - N′ - phenyl - N′ - (2′ - thenyl) - piperidine tartrate (Sandostene), was given by N. W. Clein (*Ann. Allergy* 13: 163, 1955) to 124 patients with hay fever due to pollen grass and other forms of allergy. The new drug was given alone and in combination with calcium, orally and intravenously. The antihistamine was given only to those whose symptoms were not relieved by the grass pollen antigens and other treatment. A group of patients with similar symptoms was used as control. Of the 124 patients, 21 obtained excellent, 38 good, 35 fair, and 30 poor results. Two children had minor toxic manifestations. There were no cases of drowsiness, and the author was particularly impressed with the lack of undesirable side-effects.

Spiramycin

The new antibiotic, spiramycin, was recently extracted from Streptomyces ambofaciens. A. Darbon and R. Crosnier (*Presse méd.* 63:681, 1955) used it on about 100 patients. Spiramycin has good therapeutic activity on gram-positive organisms. Its activity was as good

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as, and sometimes better than, that of the better-known antibiotics. It was excellently tolerated and was definitely superior in this respect to other antibiotics as far as oral administration was concerned. Only one patient had a gastrointestinal reaction. The daily doses were 2, 3, and sometimes 4 gm.; the 3-gm. dose appeared to be the best. There was a certain amount of disparity between the drug's activity in vitro and in vivo. In two patients, spiramycin proved more efficient than could have been expected, judging from laboratory tests, and in a third, the drug's efficacy was disappointing compared to what was seen in vitro.

Myasthenia Gravis

A new drug that is effective in myasthenia gravis was used in 50 patients by R. S. Schwab, C. K. Marshall and W. Timberlake (*J.A.M.A.* 158:625, 1955). This drug, WIN 8077, different chemically from either neostigmine or the alkyl phosphates, is N,N′-bis(2-diethy-l aminoethyl) oxamide bis-2-chlorobenzyl chloride. It is somewhat more powerful and about twice as long acting as neostigmine or Mestinon and has less side-effects on the gastrointestinal tract. Forty-one of the 50 patients in whom WIN 8077 was used are still taking it, and they derive more benefit from it than from their previous medication.

Prednisone in Dermatology

Prednisone is an effective anti-inflammatory agent. Subjective and objective improvement have been noted by H. M. Robinson, Jr. (*J.A.M.A.* 158: 473, 1955) in the treatment of acute disseminated lupus erythematosus, pemphigus vulgaris, exfoliative dermatitis, and atopic dermatitis. Prednisone is apparently from four to five times as active in these conditions as cortisone, hydrocortisone, or corticotropin, without producing more frequent or severe undesirable side-effects.

Comment: This compound can be expected to be useful topically, with even fewer or no side-reactions, but we have not yet seen any reports in the literature describing this method of application.

New Steroid Hormone

Another entry in the rheumatoid arthritis-cortisone sweepstakes, if clinical tests confirm early laboratory results, is reported by a Merck group of research chemists (Hirschmann et al., *J.A.C.S.* 77:3106, 1955). The new compound, 1-dehydro-9α-fluoro-hydrocortisone acetate is reported to possess about 25 times the activity of hydrocortisone acetate and is therefore the most potent glucocorticoid known. The compound has structural similarities to both the most potent corticoid hormones: it has the 9α-fluorine substituent as well as the 1,2 double bond, each of which alone increase the activity of hydrocortisone.

Leukemia Drug

A compound that may be superior to nitrogen mustard for the treatment of cancers such as leukemia and Hodgkin's disease has been synthesized at the University of California.

Experiments in mice indicate that the compound, a sulfur mustard, is less poisonous to the body system and has a more lasting effect.

The work was reported by D. M. Greenberg, D. C. Morrison and E. N. Sassenrath, to the meeting of the American Association for Cancer Research in San Francisco.

Experiments showed that the action of the synthetic sulfur mustard against mouse tumors is parallel to that of nitrogen mustard. But it is only about one-tenth as toxic as nitrogen mustard.

In addition, the sulfur mustard appears to be more stable in the body than nitrogen mustard. Regressions of mouse tumors last longer with the new compound than with nitrogen mustard.—*Science News Letter, April 30, 1955.*

Antitubercular Drugs

Novel antituberculosis agents have been prepared by V. C. Barry, M. L. Conalty and E. E. Gaffney (*Brit. J. Urol.* 27:35, 1955) by condensing isoniazid or *p*-aminobenzal-thiosemicarbazone with starch or other polysaccharides that have been oxidized by periodate. Products like Hinstarch and Constarch, from oxystarch and isoniazid or thiosemicarbazone, have already been described. The corresponding polymers from oxyinulin and oxyalginic acid have been named Hinulin, Conulin, and Conalg respectively. Hinconstarch is a mixed polymer obtained by condensation of oxystarch with equimolar proportions of isoniazid and *p*-aminobenzal-thiosemicarbazone. By administration of Constarch, prolongations in the survival time in mice infected with an isoniazid-resistant strain have been obtained that are better than could be obtained with amithiozone. Hinconstarch combines in itself this high activity of Constarch against isoniazid-resistant infection with the high activity of Hinstarch against isoniazid-sensitive infection. A further advantage in these agents, as shown by the toxicity data, is that a considerable reduction has been effected in toxicity with a consequent enhancement of the therapeutic index.

Thiocymetin

Thiocymetin (WIN 5063-2) is a white, crystalline powder, neutral in reaction, soluble in water and in either acid or alkaline urine, and stable after several hours of boiling in neutral water. It is free of any hemolytic action in isotonic suspensions of erythrocytes and free of precipitating effects on serum. In vitro experiments have demonstrated its bacteriostatic and bactericidal effects on a variety of gram-positive and gram-negative organisms. By means of tests in vivo, with Swiss mice, the drug has been found effective in infections with Streptococcus pyogenes, Pasteurella boviseptica, Klebsiella pneumoniae, and Brucella melitensis. It was found to be free of toxic effects when used in daily doses of 100 mg. per kilogram of body weight over a period of 28 days. Thiocymetin was given by O. Feinsilver (*Am. Pract. and Dig. Treat.* 6:34, 1955) to 54 persons, 10 of whom had pneumonia; 35, acute and chronic bronchitis; four, bronchiectasis and chronic bronchitis; two, acute cystitis; one, acute suppurative ethmoiditis; one, chronic sinusitis; and one, chronic pharyngitis. Bacterial cultures were obtained in all but four instances. The results were good; only two cases were uninfluenced: one a case of chronic bronchitis and the other a case of sinusitis in which no bacteriological information was available. One patient with cystitis due to Proteus organisms was improved to complete elimination of the infection. In two instances the drug was used effectively despite failure to demonstrate its inhibitory effect on the causal organisms in the laboratory. In two instances the drug was used successfully after intolerance to other drugs was encountered, and in two more it was used successfully after other drugs, shown in the laboratory to be effective, failed to influence the patients' clinical course. In regard to toxic effects, 10 patients (19 per cent) shows a 15 to 20 per cent reduction in either erythrocyte count, hemoglobin level, or both. No cases of leukopenia were noted. In 24 patients (44 per cent) some diarrhea was noted, in three instances considerably severe. There was one case of papular eruption. It is concluded that Thiocymetin is valuable and should be studied further.

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OILY CREAMS

(*Continued from page 473*)

lipophile balance) will determine the stability and the consistency of the emulsion.

In oily creams as well as in oily lotions, it is imperative that the oil, as well as the water, be substantially bound in micelles. Otherwise, the emulsion may not break down completely, yet still show slight separation of oil. Incidently, the theoretical discussion above refers equally to oil-in-water and to water-in-oil emulsions; the type formed will depend upon the relative proportions of the emulsifiers used and to a lesser extent upon the relative proportions of the water and the oil.

Beeswax is immensely valuable in creams containing substantial amounts of oil because of its ability to hold oil. The disadvantage of the standard cold cream formula is its alkaline pH and the fact that the soap formed by interaction of cerotic acid and borax (or other alkali) is quickly destroyed by acids and heavy metals. Cold creams may be either oil-in-water or water-in-oil, depending upon the ratio of oil-water-beeswax and the proportion of cerotic acid that is saponified.

Cosmetic oily creams are cleansing creams or conditioning creams, depending upon their formulation. When rubbed on the skin, after the evaporation of water they leave a definitely oily film which is removed after short or long contact with the skin.

Beeswax	17.0[1]	18.0[1]
Amerchol L-101[1]	3.0	4.0
Mineral oil	46.0	44.0
Borax	1.0	1.0
Water	33.0	33.0

Amerchol L-101[1] is a liquid sterol extract containing cholesterol, its isomers and related sterols.

The above formulas are examples of classical beeswax-borax cold creams. The beeswax, mineral oil and Amerchol are heated in one container to 70° C., the borax and water are heated in another container to the same temperature and the borax solution is slowly added to the oil-wax solution with continuous stirring. Perfume is added as usual at about 50° and mixing is continued until the cream is smooth. Best results are obtained by passing the cream through a colloid mill or homogenizer for reduced particle size.

G-1726 Beeswax derivative[2]	8.0[2]	3.0[2]
G-1704 Beeswax derivative[2]	....	12.0
Tween 40[2]	2.0	....
Beeswax	7.0	....
Mineral oil	50.0	50.0
Water	33.0	35.0

The G[2] products are different polyoxyethylene sorbitol beeswax derivatives.

Tween 40[2] is polyoxyethylene sorbitan monopalmitate.

(*Continued on page 550*)

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Skin Research

Antifungal Activity

J. D. Geiser (*Dermatologica*, 110:343, 1955) tested in vitro the antimycotic action of eight synthetic antihistamines and five other substances. Gentian violet was most active, closely followed by zinc undecylenate; the other compounds are definitely less active.

Comment: I have been interested in the antifungal activity of Gentian violet for a considerable length of time: the compound is also an antiseptic for infected wounds, mucous membranes and serous surfaces and is useful as an anthelmintic. It forms a coating on weeping surfaces that is protective and apparently promotes healing. It also has perfectly amazing properties, in its original role as a dye, as a staining agent so that even careful use will result in lurid purple stains all over everything in sight.

I tried to make a stable leuco form of this dye that would be colorless or nearly so and yet retain the useful activity of the original compound. The colorless forms I produced, however, were never tested because the compounds quickly reverted to their original highly colored state. Gentian violet is a member of the triphenylmethane group of dyes, related to Perkins' first Mauve and is highly colored in its quinoid form. Water-soluble precursors, incapable of assuming the tautomeric colored state, are worth testing to determine whether or not antifungal and antiseptic activity are necessarily linked with the highly colored triphenylmethane forms.

Silicone Hand Cream

A cosmetic lotion consisting of silicone 1.5 per cent, allantoin 0.2 per cent, camphor 0.1 per cent, menthol 0.1 per cent, hexachlorophene 0.25 per cent in an ethanolamine stearate lotion was clinically tested by P. LeVan, T. H. T. H. Sternberg and V. D. Newcomer (*Calif. Med.* 81:210, 1954) in 208 persons with various dermatoses. Preliminary investigation of the lotion in laboratory animals showed it to be substantially free from irritation and it did not cause sensitization. It suppressed bacterial growth in an in vitro test.

Housewives' eczema, "dishpan hands," was the largest single category in the study, 109 subjects participating; others included contact dermatitis and diaper rash. The over-all response was good.

A commercial sample package of the product showed a thick, slightly yellowish liquid cream with very good application properties. However, there seems to be some change in the formula, since the odor of camphor and menthol were not apparent, while the presence of alcohol is implied on the label but not indicated in the publication.

Poison Ivy Treatment

Using urushiol as the irritant, F. M. Thurmon, B. Ottenstein and M. J. Bessman (*J. Invest. Dermatol.* 25:9, 1955) investigated the activity of ion exchange resins as protective and healing agents on human subjects in comparison with other treatments.

Amberlite XE-87-2 is a buffered mixture of cation and anion exchange resins containing a polystyrene sulfonic acid resin, a modified acrylic type carboxylic exchanger, an alkylene polyamine anion exchanger and a quaternary ammonium base adsorbent. The pH of this mixture is about neutral.

Amberlite XE-87-3 contains polyvinyl polyamine anion resin of intermediate basicity along with the above-named cation exchangers, the ratio of the components being adjusted to give a pH value in the range of 5.5 to 7.0, similar to the pH range of various normal skin surfaces.

These resin mixtures proved to be very effective in removing urushiol from aqueous solutions and from 66 per cent glycerin solutions, but not from alcoholic solutions. Patch tests on human beings were made to test the efficacy of these two resin mixtures in 10 and 15 per cent concentration in 66 per cent glycerin, of 10 and 66 per cent glycerin solutions, of 65 per cent alcohol, of acetone, of 10 per cent zirconium oxide in a washable cream base, the base itself, a one per cent hydrocortisone cream, a two per cent Prantal cream, and proprietary silicone preparations. Using these preparations to prevent the action of urushiol, the most effective were the resin preparations, zirconium oxide cream and Prantal cream, with relative degrees of effectiveness of 98 per cent, 87 per cent and 83 per cent, respectively.

Previous clinical experiments had established that the resin-glycerol suspension used as topical therapy in 28 cases of poison ivy dermatitis controlled the dermatitis in one day in mild cases and in five days for severe cases. With urushiol, however, no treatment completely controlled the dermatitis in less than seven to nine days. The resins proved to be about equal in value and superior to the zirconium, Prantal and hydrocortisone creams. To clear the patch areas of severe urushiol dermatitis, resin XE-87-2 averaged 12 days, XE-87-3 averaged 14 days, zirconium cream averaged 16 days, Prantal cream 18 days and hydrocortisone cream 20 days.

Comment: Dr. Thurmon is continuing, in this paper, his investigation into the application of ion exchange resins to treatment of the skin surface and this provocative work should be followed closely.

Reducing Sweat Gland Activity

Using iontophoresis to introduce the parasympatholytic drug into the skin, followed after various intervals by pilocarpine, R. Brun and N. Hunziker (*Dermatologica* 110:245, 1955) investigated the efficacy of these drugs in stopping perspiration caused by pilocarpine. With respect to activity, the dosage required to inhibit sweating, the compounds tested show the following descending order of activity: atropine, scopolamine, Antrenyl, Probanthine, Banthine, the quaternary derivative of Netrine (D.Q.N.), Prantal, Buscopan, Homatropine, Multergan. The margin of variation in testing is such that there is probably no significant difference in the activity of Antrenyl, Probanthine, Banthine and D.Q.N. For equivalent doses, the descending order of duration

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of activity is scopolamine, Antrenyl, atropine, Probanthine, Banthine, D.Q.N., Prantal, Buscopan and homatropine. Under the conditions of the experiment, the duration of activity for different compounds extended from 15 minutes to five days.

There is some parallel, at least, between the action of pilocarpine and of heat in provoking sweating, since the results obtained by Brun and Hunziker for three of the compounds are concordant with those obtained by Shelley and Horvath who used iontophoresis, but heat instead of pilocarpine.

Amino Acids and Polypeptides of Skin

B. Schmilli and J. M. Paschoud (*Dermatologica* 110:315, 1955) describe a method for the estimation of free amino acids and polypeptides in human skin. The quantity of alpha-amino-nitrogen in the aqueous extracts was measured colorimetrically. The average content of normal skin in free amino acids was estimated as 229 mg. per cent alpha-amino-nitrogen, water-soluble polypeptide as 1350 mg. per cent and polypeptide soluble in 0.01N HCl as 790 mg. per cent. With paper chromatography, 12 different amino acids were demonstrated. Five additional amino acids were found in the hydrolyzed extracts. The first amino acids were asparagin, glutamic acid, serine, glycine, threonine, alanine, valine, leucine, citrulline, histidine, arginine and taurine. The amino acids obtained by hydrolysis were lysine, cysteine, tyrosine, phenylalanine and proline. Although the amounts of amino acids found in normal and diseased skin are about the same, the water-soluble polypeptide portion was found to be about 50 per cent less in psoriasis. This was apparently not due to scaliness nor inflammation but seemed more likely to be due to a disturbance in protein metabolism.

Fungus Infections

According to J. C. Sloper (*J. Invest. Dermatol.* 25:21, 1955), ringworm lesions were readily produced on the human skin with *Epidermophyton floccosum*, *Trichophyton rubrum*, and *Trichophyton mentagrophytes* and experimental lesions due to all three organisms healed of their own accord. The reasons for healing are not well defined, but it is clear that factors such as the pH of the skin, the rate of skin shedding, the character and amount of sebum secreted and the rate of hair growth all play a large part in determining the rate of spontaneous healing.

S. Molinas (*J. Invest. Dermatol.* 25:33, 1955) developed a controlled in vivo laboratory method for screening antifungal ointments, comparing the efficacy of antifungal ointments in preventing typical *T. mentagrophytes* infection in guinea pigs with that of the ointment base and with a medicated control on the same animals. The ointment base was polyethylene glycol ointment U.S.P., the medicated control contained 20 per cent of zinc undecylenate. The fungistatic and fungicidal activity of the anti-mycotic preparations were also tested by the agar cup plate method and by the wet filter paper method: the in vitro results showed no correlation with those obtained from animal studies. Of the agents tested in guinea pigs, the medicated control was effective in preventing the development of infection; other effective preparations contained a mixture of 12 per cent of benzoic acid and six per cent salicylic acid, five per cent of a benzathiazole derivative or five per cent of undecylenic acid. The preparation containing three per cent of propionic acid and 12 per cent of sodium propionate was somewhat less active.

Comment: Prevention of an infection is not the same as counteracting it after it has gained a foothold, but this procedure may prove very useful in preliminary screening.

Topical Steroid Treatment

Hydrocortisone ointment and lotion in a 1.0 per cent and 2.5 per cent concentration is the most effective remedy in the relief of the pruritus, and the reduction of the inflammation, of atopic dermatitis, neurodermatitis, dermatitis venenata (industrial, household, cosmetic, and plant), and anogenital der-dermatitis according to I. I. Lubowe (*A.M.A. Arch. Dermatol.* 72:164, 1955).

Hydrocortisone ointment, when combined with low-sensitizing antibiotics, as neomycin and bacitracin, is effective in the therapy of lichen simplex chronicus, nummular eczema, and allergic dermatoses with superimposed infection.

The 9-alpha-fluorohydrocortisone acetate lotion and ointment in concentrations of 0.1 per cent and 0.25 per cent have a desirable therapeutic effect similar to that of the hydrocortisone preparations in a 1.0 per cent and 2.5 per cent concentration. The exacerbations of the symptoms associated with the above dermatoses occur if daily maintenance dose is not continued judiciously.

The incidence of sensitization is extremely low and rarely observed with the 9-alpha-fluorohydrocortisone.

When the hydrocortisone preparations are incorporated in accepted dermatological formulations, they may reduce the index of sensitization of these preparations, as observed with continuous use of crude coal tar, antihistamines, sulfur, iodochlorhydroxyquinoline, 8 - hydroxyquinaldine, and oxytetracycline.

Nail Discoloration

Alcoholic preparations of both resorcinol and resorcinol monoacetate may produce a yellowish-orange discoloration of the nails according to A. B. Loveman and M. T. Fliegelman (*A.M.A. Arch. Dermatol.* 72:153, 1955). This becomes manifest and of clinical significance only when nail lacquer has been previously applied.

The above pigmentation has been reproduced experimentally by employing several commercial brands of both colored and colorless lacquers, including one of a hypoallergenic type.

Because of the more or less universal presence of resorcinol and resorcinol monoacetate in many dermatologic preparations, patients wearing nail lacquer should be cautioned concerning the possibility of staining their nails and that reasonable preventive measures be employed.

Psoriasis Treatment

An attempt by R. B. Rees, J. H. Bennett and W. L. Bostick (*A.M.A. Arch. Dermatol.* 72:133, 1955) was made by using conservative dosage of Aminopterin to clear or improve lesions of psoriasis without incurring too high an incidence of toxic effects. It was found that when Aminopterin was used in a dose of 0.5 mg. daily by mouth, not exceeding 6 mg. in a period of 12 to 20 days, clearing or great improvement of psoriatic lesions occurred in approximately 80 per cent of cases with an incidence of toxicity of eight per cent. Toxic effects on such a schedule were slight and transitory. This schedule is approximately one-third as intensive as that suggested by Gubner.

In the discussion following the paper, it was brought out that some investigators confirmed these findings, but others could not. The nature of psoriasis is such that any new treatment must be evaluated with extreme caution.

(Continued from page 544)

G-1725 Beeswax derivative[2]	1.5	5.0
G-1702 Beeswax derivative[2]	....	5.0
G-1704 Beeswax derivative[2]	3.5	....
Beeswax	12.0	5.0
Mineral oil	30.0	20.0
Hydrogenated vegetable oil	....	25.0
Lanolin	....	3.0
Borax	1.0	....
Water	52.0	37.0

These creams are made by a two vessel procedure in which the oil-soluble components are heated separately from those soluble in water. The two are combined at 70° C., perfume added at 50° and filling is done a few degrees lower. Homogenization will improve the texture of the products.

Stearic acid	29.0[3]	20.0[3]	20.0[3]
Lanolin	8.0	14.0	.....
Mineral oil	50.0	100.0	70.0
Triethanolamine	3.8	2.0	8.0
Propylene glycol	10.0	10.0	.....
Alcohol	.....	.....	8.0
Water	100.0	54.0	100.0

Although triethanolamine creams can be made by heating all components together in one container with stirring, the two vessel procedure is generally preferable. Oil-soluble ingredients are heated in one vessel to 70° C., water-soluble components are heated in another container to approximately the same temperature and, while stirring, the hot oil solution is slowly added to the aqueous solution. Volatile components, alcohol and perfume, are added below 50° and the mixture stirred to room temperature.

Aldo 28[4]	12.0[4]
Beeswax	3.0
Spermaceti	3.0
Mineral oil	30.0
Glycerin	8.0
Preservative	0.1
Perfume	0.4
Water	43.5

Aldo 28[4] is a grade of glyceryl monostearate containing potassium stearate as the primary emulsifying agent.

All components are heated together to 90° C. and stirring continued to 45°, at which point perfume is added. Stirring is continued until a smooth cream results.

Tegin[5]	12.0[5]	15.0[5]
Spermaceti	5.0	5.0
Cetyl alcohol	....	2.0
Mineral oil	25.0	18.0
Stearic acid	2.0	....
Glycerin	5.0	5.0
Preservative	0.1	0.1
Triethanolamine	1.0	....
Water	49.9	54.9

Tegin[5] is a self-emulsifying grade of glyceryl monostearate.

Although both formulas can be made by heating all components together to 85° C. and stirring to room temperature, the first can also be prepared, if desired, in two vessels, one containing glycerin, triethanolamine and water, the other containing the other ingredients. Both mixtures are heated to the same temperature, about 75° C., and the oil solution added to the aqueous solution with stirring, which is continued to room temperature.

Polyethyleneglycol 300 monostearate	14.0[6]	9.0[6]
Glyceryl monostearate, pure	....	3.0
Beeswax	10.0	....
Stearic acid	....	7.0
Cetyl alcohol	1.0	....
Paraffin	....	5.0
Butyl stearate	1.0	3.0
Mineral oil	20.0	20.0
Triethanolamine	1.5	0.5
Water	52.5	52.5

All of the ingredients are heated together to 85° C. with stirring, stirring being continued until the mixture reaches 50° when the perfume is added. The inclusion of a preservative is advisable and the cream may be filled in melted form.

Beeswax	16.0[7]
Mineral oil	50.0
Diethylaminoethanol	0.6
Water	33.0

This is a standard cold cream formula modified by the substitution of diethylaminoethanol, an organic base, for the usual borax. The usual procedure for creams of this type, which need not be modified in this instance, calls for melting of the beeswax and mineral oil at 70° C. and heating the base and water to the same temperature. The oil solution is added to the aqueous solution with stirring which is continued almost to room temperature, when a smooth, homogeneous cream is obtained. Perfume, as usual, is added at a temperature when the mixture is still liquid, but low enough to minimize evaporation losses. The cream may be modified by the addition of small proportions of lanolin or cetyl alcohol, hardened by replacement of part of the mineral oil by paraffin or ozokerite or made softer by increasing the proportion of water.

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The essential oil of jasmin is not prepared on a commercial scale according to V. Vasic (*Manuf. Chem.* 1955, 297). Distillation of the jasmin flowers gives a very poor yield of an essence with a sour odor, extremely unlike that of the flowers. Natural jasmin perfume is extracted by volatile solvents, such as petroleum ether or benzene (concrete and absolute), and by enfleurage (pomade, neutralin). A very large amount of the jasmin perfume of commerce, however, is partially or entirely artificial.

A. Hesse's works, which are devoted particularly to the essence obtained by the enfleurage pomade, give the approximate analysis of the essence as:

	Per Cent
Benzyl alcohol	6.0
Benzyl acetate	65.0
***d*-Linalool**	15.5
Linalyl acetate	7.5
Jasmone	3.0
Methyl anthranilate	0.5
Indole	2.5
Bases with a narcotic odor and phenols	**traces**

Incidentally, such a mixture would not be the true perfume of jasmin, as the list given is incomplete and the figures incorrect, this being particularly so in regard to benzyl alcohol.

To the above list of constituents, Elze has added *Para*-cresol and geraniol. Apart from the above constituents jasmin oil also contains geranyl acetate, geranyl butyrate, benzyl butyrate, nerol, terpineol, *para*-cresyl acetate, linalyl benzoate, benzyl formiate, benzyl propionate, neryl acetate and terpinyl acetate.

Jasmin is not only indispensable as a foundation, it also plays a role of utmost importance in relation to other flower oils. The odor of acacia, lilac, lily-of-the-valley, hyacinth and others change considerably on the addition of jasmin. Chypre-type perfumes can be worked up into a fine bouquet by the addition of jasmin. In the fougere-type perfumes a bouquet effect may be created by adding the flowery note of jasmin.

Tea Tree Oil

As regards Melaleuca alternifolia, an average oil contains 50 to 60 per cent of terpenes (pinene, terpinene and cymene), from three to eight per cent of cineole (accounting for the camphoraceous odor), and an alcohol terpinenol, which supplies the pleasant nutmeg-like odor; also small amounts of sesquiterpenes and their alcohols. The oil retains its refreshing note to a considerable degree when exposed on paper strips according to E. Samuel (*S.P.C.* 28:890, 1955). Its warm, spicy character suggests a use for toning and blending in such perfumes as sandal, musk, peau d'espagne, rondeletia, millefleurs, certain fougeres and spicy bouquets.

Its strength was compared in a Peau d'Espagne perfume by replacing nutmeg oil with the sample, there being an improvement in an agreeable freshness of tone, but no alteration in the main characteristics of the perfume.

The improvement that small additions of nutmeg and M. Alternifolia oils impart to Lavender Water, giving it a pleasing spicy characteristic, were next tried, adding 0.1 per cent of each oil for comparison. A more distinct and agreeable note was imparted to the lavender water containing the sample of M. alternifolia oil, and no doubt this oil would be valuable in other toilet waters, such as Florida and Hungary.

The high boiling range of the oil would indicate its stability in soaps, and this was tried out by the boiling-with-soap test; compared with the nutmeg oil of commerce, it certainly proved to be much more stable. The oil should, therefore, be useful in perfumes for boiled, cold process, transparent, and liquid soaps. Other suggestions for soap would be in glycerin and cucumber, cold cream, sandal, musk, peau d'espagne, buttermilk, palm and olive, pine, and antiseptic perfumes, to enhance the value of lavender, and in many other instances.

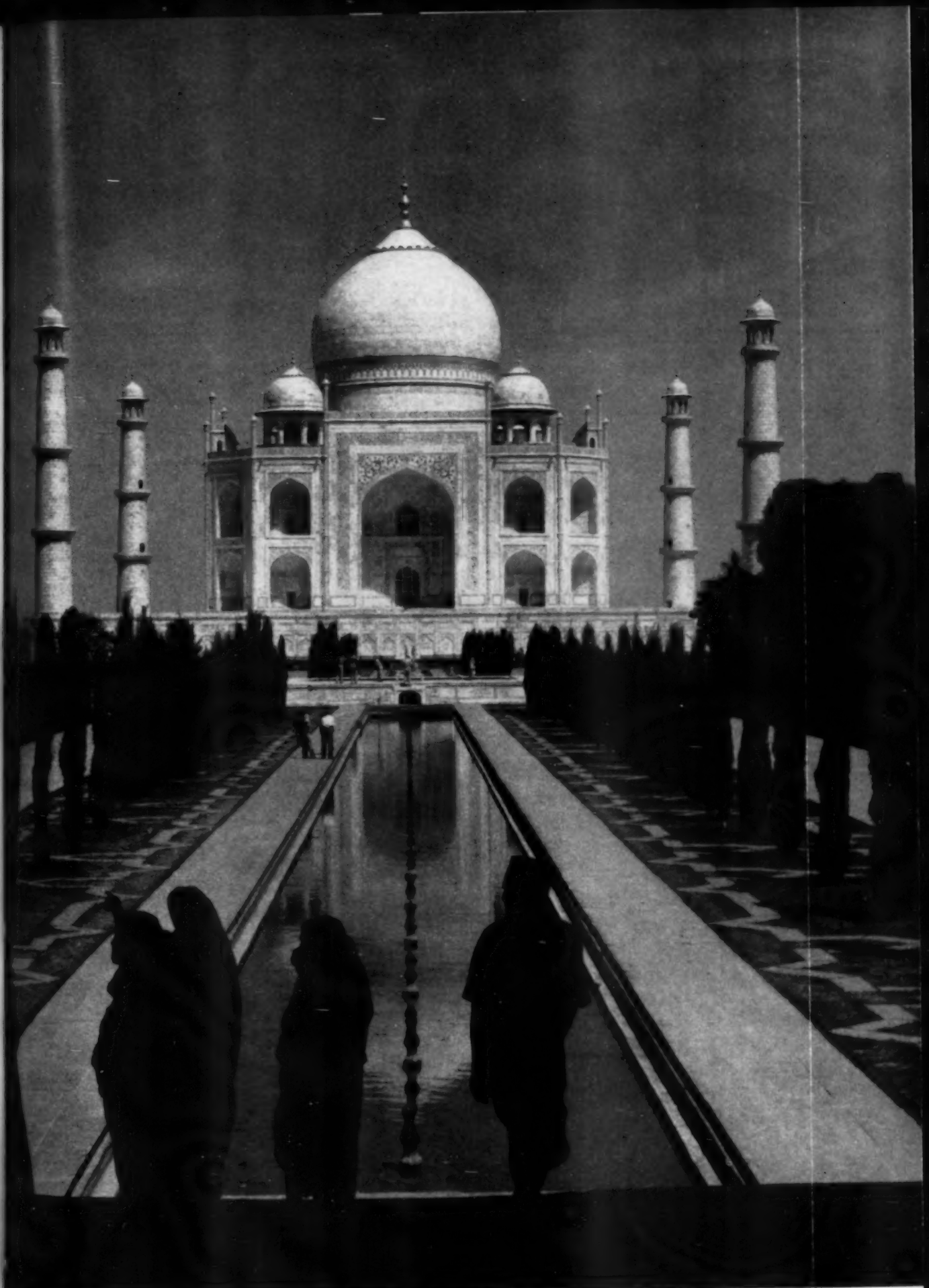
The valuable antiseptic properties of the oil and its spicy flavoring note should prove useful in dentifrices and mouth washes.

Indian Spearmint Oil

The main component of the higher boiling fraction of Indian spearmint oil according to K. K. Chakravarti and S. C. Bhattacharyya (*P.E.O.R.* 46:256, 1955) is a low-melting, crystalline terpenic glyoxal ($C_{10}H_{14}O_2$) which has been named as mintglyoxal. It appears to contain a cyclopropane ring with an attached isopropylidene group. Mintglyoxal is probably the only specimen of a glyoxal isolated from essential oils. Besides chrysanthemum dicarboxylic acid, it also appears to be the only other example of a terpenic derivative containing an unattached cyclopropane ring. Its derivatives and degradation products have been thoroughly investigated, using U-V and infra-red spectroscopy, whenever necessary. The fraction also contains another uncharacterized material with somewhat similar properties.

Perfuming Deodorants

The perfume in deodorants must emphasize the impression of cultivated cleanliness. It does not matter whether the tendency of the perfume is elegant and temperamental, eccentric and stylish, seductive and feminine, athletic and tart, or mild and fresh. If, however, a perfume disseminates a too intense cloud, even a symphony of the most tantalizing fragrances is repulsive, suggesting that an effort was made to cover certain defects of the skin with powerful



World famous and most beautiful mausoleum, the Taj Mahal, built (1631-1648) near Agra, India by Mogul Emperor Shah Jahan, was planned originally as a pleasure palace but later became a sepulchral monument to Mumtaz Mahal, his favorite wife.

ONE of the most promising technical developments in our field in recent years is exemplified in the Instrumental Laboratory now in operation at our Clifton plant. Here, most recent advances in electronics, physics and chemistry are utilized to help develop and maintain the quality and uniformity of product that is traditional of our firm. Through the employment of spectrophotography, it is now possible to record, for precise evaluation, the ultraviolet, visible and infra-red properties of our own as well as competitors' products. We are also able to maintain more accurate control of our raw materials and to select those that will be productive of finer grades and better yields. In addition to these quality gains, the facilities of this Laboratory contribute importantly to our continuing research, as well as to the development of new and more efficient analytical techniques, and to the study and synthesis of greatly improved replacements for certain hard-to-get, higher priced oils. . . . Accomplishments to date are but a "scratching of the surface" of possibilities inherent in the fascinating work of this Laboratory—an augury of considerable promise to those customers whose finished goods already benefit from the superiority of the Fritzsche products they now employ.

FRITZSCHE *Established* 1871
Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, *Toronto, Canada and *Mexico, D. F.* FACTORY: *Clifton, N. J.*

Taz-Mah

A FRITZSCHE "EXCLUSIVE"

FROM the breathless beauty of its exquisitely proportioned exterior, from its graceful arches and delicate traceries of rich, oriental design, and from the hint of even greater treasures within its luxurious facade . . . . from these aesthetic considerations of India's famed Taj Mahal have we derived inspiration for our elegant new fragrance, TAZ-MAH. It is no easy task to translate visual into olfactory sensations, but—like the artist with palette and paint—our perfumers have tried—with fragrance—to capture something of the beauty and seductive charm of this renowned Eastern shrine. In the skilled blending of scents that constitute this perfume's lovely topnote, you'll discover—only faintly concealed—the underlying warmth and richness of its basic oriental character. We hope you'll try it.

CREATORS of MADE-TO-ORDER FRAGRANCES for PERFUMES, TOILETRIES and COSMETICS

•

ODORANTS and DEODORANTS for INDUSTRIAL and TECHNICAL USE

•

SUPPLIERS of AROMATIC CHEMICALS, BASIC PERFUME and FLAVOR RAW MATERIALS

•

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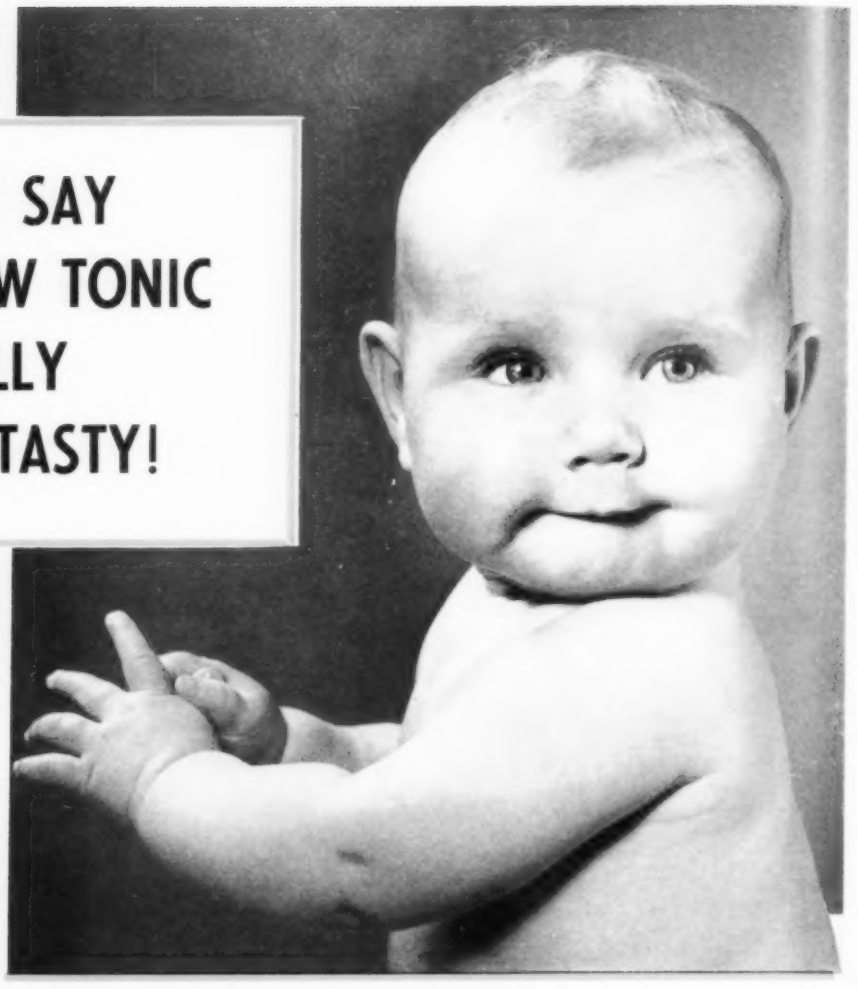
I MUST SAY MY NEW TONIC IS REALLY QUITE TASTY!



"As Mother says, you who make up these wonderful medicines must be getting hep to what we little fellows have been complaining of right along. . . . Make your tonics ***taste*** *better and we'll take them without a whimper!"*

* * * * * * * * * *

True, the ethical drug manufacturer is beginning to accept the fact that his oral product must possess, in addition to its *efficacy*, a high degree of *palatability* if it is to be successful in attaining its highest possible sales potential. To gain the latter, many of the most important pharmaceutical houses are taking increasing advantage of our exceptional facilities for handling their flavoring problems. They are doing this because we are able, through long experience and the specialized skills of our pharmaceutical flavor laboratory, to produce more satisfactory results—taste effects that will be compatible with and appropriate to the finished product—much more economically and efficiently than can the average drug manufacturer himself. Why not let us apply our flavor "know-how" to the problem of making your new product palatably acceptable,—even to the most finicky childish taste!

For GOOD TASTE

in Pharmaceuticals *Consult* . . . . . FRITZSCHE *Established* 1871

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perfumes.

To fulfil its hygienic purpose, the perfume should contain blends of tart, fresh, and exuberant scents. If, for a change, the usual Eau de Cologne and lavender odors are discarded, recourse can be made to refreshing, spicy herbaceous odors, the scents of fruit ripened in lots of sun and even sporty, harsh perfumes.

Though this function is only secondary, the perfume should mask the hardly noticeable remainder of evaporation of the skin. In anti-perspirants for foot baths, refreshing conifer-needle perfumes are most agreeable. Use may be made of conifer needle oils finished with the spicy, resinous perfume of the undergrowth of an early-summer conifer forest.— *K. Bergwein, Dragoco Ber. 1955, p. 96.*

Ambropur

The most interesting component of Ambergris is odorless ambreine, an easily isolated tricyclic triperpene alcohol constitution was first determined in 1946. By oxidation of its aliphatic double bond, ambreine can be readily split into dihydro-α-ionone, with a strong ambergris odor, and odorless ambreinolide.

During extensive investigations of the odoriferous principles of ambergris, it was found that some compounds containing the bicyclic fragment of the ambreinolide molecule, although they did not have a very intense odor, showed the typically heavy, warm odor of ambergris. These substances are especially distinguished by their great tenacity; they quickly numb the olfactory nerves, characteristic of all genuine ambergris perfumes. The monocyclic odor principles of ambergris account for its strongly woody, slightly tobacco-like note which makes natural ambergris so attractive.

The two notes described do not make up the whole complex of ambergris odor. The harmonious composition involves many other principles, comprising perhaps even perfumes not yet discovered. The product obtained by steam distillation of genuine ambergris may well contain other substances of bicyclic structure besides the unsaturated oxide. The well-known aging process of the ambergris infusion is nothing else but the thorough oxidative degradation of ambreine and of its primary decomposition product, ambreinolide. We do not yet know whether autoxidation is due to the catalytic effect of copper, which is contained in the haemocyanin of the cephalopods swallowed by the spermwhale, or whether the ambergris compounds of high molecular weights act as strong oxygen donors, thus provoking autoxidation. In any case, these considerations motivated the systematic investigation of ambreine reactions, in which one could expect to obtain compounds of ambergris character possibly preexisting in ambergris.

A tricyclic ketone produced by dehydration of ambreinolide also has a very persistent ambergris scent. On the basis of knowledge obtained by partial syntheses, further attempts to find a synthetic product containing as many as possible of the major odoriferous principles of true ambergris were started. Ambropur is the result of these efforts. This product duplicates the complex of the ambergris odor, but in much stronger concentration due to the lack of any odorless substances. The uniform quality of Ambropur is guaranteed by synthesis carried out in such a way as always to obtain the identical product through a uniform series of reactions.

It is unnecessary to expose solutions and compositions of this product to a long period of aging. On the contrary, uncontrollable autoxidation can now be avoided so that Ambropur is available in sealed ampoules to be opened by the perfumer when preparing his solutions. This device guarantees uniformity of intensity and persistency of its odor.— *Dragoco Berichte.*

Essential Oil Characteristics

The special characteristics and behavior of essential oils have to be taken into account when one uses them. Amongst these properties of which cognizance has to be taken into account in their use and in any formulation in which they are used, mention may be made of their sensitivity to chemical reagents and high temperatures, also to light and metallic contamination. Their chemical sensitivity especially applies to the citrus oils and the precautions which have to be taken regarding their storage should be far more widely known than they are at present. With the citrus oils the presence of acid or alkali is very detrimental to their delicate chemical constituents. Before these oils are added to a product the possibility of chemical interaction between these reactive aldehydes, alcohols and other bodies present must be considered. For instance in using a citrus oil with juice which has been strongly preserved with sulfur dioxide the aldehyde will combine with the latter to form a chemical compound.

The labelling of products used to impart flavor and odor is a controversial subject. Oils are in the main not cheap articles of commerce and in recent years prices have in some cases reached extraordinary levels. Naturally this has led flavor and aroma users to look for substitutes. With substitutes for natural essential oils, these in many cases have the majority of the bodies present in the natural oil and if used with discretion give very satisfactory results. To an expert with a keen nose they will no doubt, however, be differentiated from the genuine oil. As mentioned above in certain cases a blended composition will be found to be far more effective than the straight essential oil. For example a baker may well find that the harsher note of citral extracted from other sources blended with other bodies stands up to the temperatures used in his bakery far better than lemon oil. Again, to impart a lavender note to a polish which contains waxes and solvent with their own particular odor notes the addition of other bodies to lavender oil may well be necessary to obtain the right note. A purist in expression can only plead for the names like lemon oil, lavender oil, otto of rose to be retained for the oils as actually secreted by the plant and for any other odoriferous mixture to be labelled in a different manner. —*P. & E. O. R. 46:248, 1955.*

Vitamin E and Dysmenorrhea

A trial of the use of vitamin E (α-tocopherol) in the treatment of primary dysmenorrhoea has been conducted by E. B. Butler and E. McKnight (*Lancet*, 1955, 1, 844), with the co-operation of 100 girl students of the University of Wales. The results are sufficiently encouraging to warrant extended clinical trials. One group received vitamin E (50 mgm. three times a day) for ten days before the menstrual period and for the next four days, for two, and, in some cases, three menstrual cycles. The other group, the controls, received inert tablets of similar appearance to those containing the vitamin E. In the second-month trials 41 per cent of the girls showed a significant improvement against eight per cent of the controls, and in the third-month trials the corresponding figures were 59 per cent and 14 per cent. In most of the successful cases treated vitamin E appeared to have a cumulative effect. The authors suggest that the action of the vitamin may be in the relief of vasospasm.

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Amerchols®

LANOLIN CHOLESTEROLS in their most active form.

The Amerchols are safe, non-ionic, natural EMULSIFIERS, PENETRANTS and EMOLLIENTS. They will help you achieve superior cosmetic and pharmaceutical formulations by markedly improving stability, texture, appearance and effectiveness.

An Amerchol such as the multi-sterol, liquid **Amerchol L-101** enhances softening, penetrating and spreading activity while holding desirable moisture to the skin. The surface active Amerchols function at the interface in oil-in-water emulsions to bring about these unique effects on skin and hair.

The Amerchols are ideal ointment bases since they are stable, induce rapid drug release, and promote optimum healing rates.

WE KNOW OF NO CASE OF AN ALLERGY DUE TO AN AMERCHOL.

AMERICAN CHOLESTEROL PRODUCTS
• INCORPORATED •
MILLTOWN • • • NEW JERSEY

Write on your business letterhead for technical literature and suggested formulas.

Readers' Questions . . .

Hand Cream: *I am interested in obtaining a hand cream formula containing a high percentage of glycerin and some lanolin. Is there any agent used in creams to aid in the absorption of emollients such as lanolin? Also can you give me any information about the use of vitamin C in cosmetic creams? Does vitamin C in creams have any cosmetic value?* SEATTLE.

A cream that can service as a basis for further experiment is the following:

Glyceryl monostearate self-emulsifying	**12.0**
Lanolin	**2.0**
Mineral oil	**1.5**
Glycerin	**10.0**
Preservative	**0.1**
Perfume	**0.4**
Water	**74.0**

The preservative should be methyl parahydroxybenzoate. All of the ingredients, with the exception of perfume, are heated together to about 80° C. and stirred until an homogeneous mixture results. Stirring is continued to 50° when the perfume is added and then continued to room temperature. Surface active agents are sometimes suggested for improving the absorption by the skin of emollients and other cream components: It does not seem to me that ascorbic acid is used at its optimum efficiency in cosmetic creams. In any event, it is likely to be unstable and therefore hard to handle.

Alkaline Mouth Wash: *Can you please supply me with a formula for an alkaline mouth wash containing a surface active agent?* EL PASO.

A formula filling your specifications is the following:

Borax	**4.0**
Sodium bicarbonate	**1.5**
Thymol	**0.1**
Alcohol	**3.5**
Glycerin	**10.0**
Surfactant	**0.5**

The surface active agent, because of the alkalinity of the solution, should be either an anionic active product, such as a lauryl sulfate salt, or non-ionic, since the cationic agents are incompatible with alkaline solutions. More flavor and a sweetening agent may be added if desired, in which case additional alcohol will generally be required to solubilize the flavor oils.

MARKET RESEARCH AND PHARMACEUTICAL ADVERTISING

(*Continued from page 476*)

Is the Doctor a "Customer?"

The medical profession is the best educated group of consumers—and most difficult market for advertising. Despite all that we think we know about doctors, and to a lesser degree, about dentists, veterinarians and pharmacists, we are still far from real effectiveness in our promotion. Just as we have much to learn about the doctor, so must we know more about his reaction to various media, to our company, to our advertising, and to our products.

Let us remember that physicians receive an average of more than 12 pieces of advertising mail per day, talk daily to 3.4 detailmen, and receive an average of 7.2 different medical journals. Increasing volume of promotional pressure on physicians is leading to more active resistance as the physicians are increasingly pressed for time. Growing practices, expanding professional activity, more complex channels of communication and organization serve to increasingly interfere with the gaining and holding of the doctor's attention.

Believe it or not, doctors are human. For the most part, physicians respond to all of the basic emotional and persuasive influences of advertising. Yet physicians are different, requiring some modification of the accepted promotional technics. Just how different they are, and exactly what these technics may be, apparently has not been resolved. We know that the better and busier the doctor, the harder he is to reach. We need to know more about how, where and when we can reach him.

Doctors Are Difficult!

Studies have shown a characteristic instability of pharmaceutical demand. The need for the market position of any product to be continuously sustained by intensive promotion has been proven. Doctors' preferences change rapidly and are hard to anticipate.

Doctors state that they prescribe pharmaceutical products because of their usefulness of "operational characteristics" rather than because of brand, price, packaging or popularity.

The physician prescribes a pharmaceutical specialty. Why did he choose that particular brand? Was he convinced by some recent advertising or because he heard a colleague that morning mention it in the hospital staff room? Does the trade mark remind him of his patient's belly ache, or of his new car? Or in turn is he reminded of the trade name because of his patient's ulcer or his secretary's pretty eyes?

Motivation Analysis

Advertising managers still guess at the "why" of physicians' preferences, yet they'd like to know.

(*Continued on page 558*)

have you tried

Modulan T. M.

The MODIFIED LANOLIN with new properties.

Modulan is chemically treated lanolin containing all the constituents of lanolin modified by a unique treatment to impart NEW and VALUABLE PROPERTIES.

Modulan forms clear solutions even in cold mineral oil and deposits hydrophobic, emollient films on skin and hair. These desirable protective films are waxy rather than tacky and are very pleasant to the touch.

Modulan is extremely hydrophobic – does not form greasy emulsions and is practically odorless. Because of its outstanding compatibility with oil-in-water emulsions and with soaps and shampoos, Modulan is particularly recommended for use in creams, lotions, baby products, hair preparations, make-up, and ointments.

CLINICAL INVESTIGATIONS HAVE INDICATED THAT MODULAN IS HYPO-ALLERGENIC.

AMERICAN CHOLESTEROL PRODUCTS
• INCORPORATED •
MILLTOWN • • • NEW JERSEY

Write on your business letterhead for technical literature and suggested formulas.

Industry's Books...

Microbiology an Introduction, *by Ernest Gray, M.Sc., (Cantab.) M.R.C.V.S., 175 pp., pocket size, Philosophical Library, Inc., New York, (1955), cloth,* **$3.75.**

This book is designed as a simple introduction to Microbiology. The plan of the book follows that adopted by the author during some years teaching of Microbiology to classes of laboratory assistants, and others more generally interested in the subject.

Catalysis (Volume III) Hydrogenation and Dehydrogenation, *Edited by Paul H. Emmett, Gulf Research and Development Company's Multiple Fellowship, Mellon Institute, and contributing Authors, 504 pp., Reinhold Publishing Corp., New York, (1955), cloth,* **$12.**

The first two volumes of this series cover all the general approaches and tools used to gain a better understanding of both homogeneous and heterogeneous catalysis. Volume 3 summarizes existing knowledge on the subjects of hydrogenation and dehydrogenation. Among many important topics covered are hydrogen-deuterium exchange, and such commercial processes as the synthesis of ammonia and methanol, the dehydrogenation of butane and butene to form butadiene, and the hydrogenation of fats to oils.

New Methods in Analytical Chemistry, *by Ronald Belcher, B.Sc., Ph.D., University of Birmingham, and Cecil L. Wilson, Ph.D., D.Sc., Queen's University of Belfast, 287 pp., Reinhold Publishing Corp., New York, (1955), cloth,* **$5.50**

This is a compilation of analytical methods that have either been only recently discovered, or have been hidden in the vast literature of analytical chemistry. This should prove of value to research chemists and students alike.

Trademark Management, A Guide for Businessmen, *130 pp., Published by United States Trademark Association, New York, (1955),* **$5.**

This book tells you what to look for in a trademark and what to avoid. It outlines the steps you have to take to create, register and protect a trademark. This is a practical guide for executives, department heads and responsible employees of any business which manufactures, advertises and sells a trademarked product.

A Dictionary of Terms in Pharmacognosy and Other Divisions of Economic Botany, *by George MacDonald Hocking, Ph.D., Professor of Pharmacognosy, Alabama Polytechnic Institute, 284 pp., Charles C. Thomas, Springfield, Ill., (1955), Cloth,* **$4.75.**

This is a compilation of words and expressions relating principally to natural medicinal and pharmaceutical materials and the plants and animals from which they are derived, their chemical composition, applications, and uses, together with some other materials derived from the plant, animal, and mineral kingdoms of current economic interest.

New and Nonofficial Remedies 1955, *655 pp., J. B. Lippincott Co., Phila., Cloth,* **$3.35.**

This work is published annually under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Included in the 1955 edition are articles

that the Council found acceptable under its former rules through the period ending January 1, 1955.

The Quantitative Analysis of Drugs, *by D. C. Garratt, B.Sc., Ph.D. (Lond.), Second Edition, 670 pp., Philosophical Library, (New York), (1955), cloth,* **$17.50.**

Since the publication of the first edition of this book (which appeared under the title Drugs and Galenicals), the expansion in the field of medicinal chemicals has been considerable. This second edition has been undertaken because of the world-wide demand for the work, which has been unobtainable since the war. The book is essentially practical and full reference to the literature is maintained. It should prove a useful bench companion to all drug analysts in the laboratories of manufacturing firms, public analysts, toxicological analysts and others similarly engaged.

Your Feet and Their Care, *by William A. Rossi, Doctor of Surgical Podiatry, 212 pp., Emerson Books, Inc., New York, (1955), cloth,* **$3.00.**

This book covers foot ailments and disorders in detail. It describes the effects of improper shoes and bad feet on other parts of the body. It tells how foot ills affect bodily health and can bring about general fatigue, backaches and headaches, nervous strain and irritability, leg pain, and many other disorders.

Introduction to Chemical Pharmacology, *by R. B. Barlow, Research Fellow, Yale University School of Medicine, 343 pp., John Wiley & Sons, Inc., New York, (1955), Cloth,* **$6.25**

The subject of this book—namely, the structure-action relationships of drugs, or, to use an old-fashioned phrase, the relation between chemical constitution and physiological action—is one that has fascinated chemists, particularly organic chemists, for many years. This book is almost the first attempt to instruct chemists about these matters.

Hawley's Technical Speller, *Compiled by Gessner G. Hawley, Executive Editor, Reinhold Book Div., and Alice W. Hawley, Consulting Editor, 146 pp., Reinhold Publishing Corp., New York, (1955), cloth,* **$2.95.**

This book contains over 8,000 difficult technical words selected from the vocabularies of chemistry, physics, engineering, electronics, biology, medicine and other fields of science and technology. Each word is broken down into its syllables for each spelling and pronunciation.

Systemic Associations and Treatment of Skin Diseases, *by Kurl Wiener, M.D., Dermatologist, Mount Sinai Hospital, 556 pp., Illus., The C. V. Mosby Co., St. Louis, (1955), cloth,* **$17.**

In the author's book, Skin Manifestations of Internal Disorders, published in 1947, he described the skin changes which accompany internal or systemic diseases. As the title of the book implied, it did not deal with the systemic phenomena associated with skin diseases.

Qualitative Organic Analysis and Scientific Method, *by A. McGookin, D.Sc., Ph.D., Senior Lecturer in Organic Chemistry, The University, Liverpool, 155 pp., Reinhold Publishing Corp., New York, (1955), cloth,* **$4.50.**

This work is especially designed for beginning students of organic chemistry and biochemistry. Advanced students and research workers in these fields will also find the book an excellent refresher course in the fundamentals of organic analysis.

AVERAGE PRODUCTION—*195 A MINUTE!*

Yes, and this beautifully engineered Mateer Dual Head Filler fills either liquids or powders, including sterile products.

MATEER ELECTRIC FILLERS
Manual Semi-Automatic
Fully-Automatic

handle all kinds of material and guarantee you the ultimate in filling performance.

•

When investing in filling equipment, make your investment pay *double profits* by buying MATEER which fills both powders and liquids. Write Dept. D.

G. DIEHL MATEER CO.
Lincoln Highway, Strafford, Wayne, Pa.

(*Continued from page 555*)

They're like the aviators of post World War I, "flying by the seat of their pants." Out of the application of psychology to business, and a better understanding of sociology, the new marketing tool of motivation analysis has developed. Testing devices such as qualitative and quantitative research, structured and depth (non-structured) interviews, and projective tests, are combine°into a difficult to understand and equally difficult to use technic.

From the conventional market research methods we learn what are the facts and what has taken place. Then from the methods of motivation research we may discover why these actions occurred,—why the doctors, druggists and consumers acted as they did. We are then given a clue, a basic idea as to motivation and must return to the conventional methods to test its validity before applying it to our advertising or marketing. It's well to know why our product is prescribed, as well as when, where, by whom and how much.

Influencing Doctors

As physicians (and pharmacists) are human, they too respond to many of the same influences as do the laity. However, there is apparently one distinction between advertising to the physician and to the consumer. The consumer's emotion generally may be appealed to directly. However, physicians have a "self-image," a feeling that they are rational and logical, especially in prescribing. Thus to be prescribed, a pharmaceutical must be presented "for the doctor." It must also reflect as far as possible the personality of the company in an aura of professional service.

However, motivation research or analysis is a slow, costly and difficult technic. It is subject to error due to bias or lack of interviewer or respondent comparability. For what it is worth, it's a step in the right direction of more effective advertising. Many Advertising and Research men are talking about and "playing with" motivation analysis. Few understand it. In a decade or so, however, it will grow in value and be a standard tool in research and promotion.

Motivation in Industry

Motivation research has applicability to any form of marketing. We may be certain that human emotions play just as important a part in determining a physician's preference as it does that of a druggists' or the consumer. Psychological sales resistance can be overcome in industrial marketing just as well.

The most common present day use for motivation analysis is in the study of physicians' reactions to copy, both before and after the fact. Research can determine the reaction of physicians to the quality of ideas in pharmaceutical advertising and to the forcefulness with which the idea is developed. Copy that demonstrates a use, proves value, or shows before-and-after evidence, can best be determined by the reaction of the physician (or the public). However, motivation studies will find more acceptance and use in pharmaceutical advertising if they are devoted to finding answers to the question of "What moves the physician?"

When physicians are interviewed in the course of a motivation study, it is sometimes discovered that certain specialties are prescribed because they are products which are not known to the public. Therefore, by avoiding in advance any attempt on the part of the patient to prescribe for himself, the physician believes he is master of the situation.

Motivation research can help materially, not only by determining readership, but as well probing the impact and extent to which the advertising ideas have remained with the reader. When motivation research can explain why some advertisements are more effective than others and predict the amount and kind of product usage which will result from any given amount of pre-planned advertising, then Advertising will certainly give to market research men an important role in medical advertising.

It is gratifying to note that motivation analysis has been recognized by pharmaceutical advertising as providing valuable help in understanding the reasons why physicians prescribe and the influences which affect their choice of medication. This is evidenced in the study of physicians' motivation which has just been completed and which is to be reported to the Pharmaceutical Advertising Club of New York in a few days.

This study may discover the practical answers to questions such as: What is the present level of confidence in ethical drug promotion and its believability? What are all the emotional as well as rational factors that lead the physician to continue prescribing and recommending the use of one medication, while discontinuing the use of another? What is the relative role and influence and how can the effectiveness be improved of such channels of communication between the ethical drug company and physician as: detail men, journal advertising, direct mail, company journals, and public relations?

Also, are single or multiple indications generally more believable? What is the effect of market, climate and trends in medical interest? Who are the doctor's most respected authorities? What are the relative roles of staff and hospital experience, journal and other professional articles, general practitioner and specialist, friends, general newspaper and magazine reports?

Let's not forget that "ethical" pharmaceutical products are prescribed in response to the combined stimulus of several forms of advertising or communication. No single source of information is sufficient to convince the physician. Also we should know why the physician acts as he does. Even though direct mail, journal advertising, sampling, and scientific articles are important factors in influencing physicians to pre-

(*Continued on page 560*)

Trade Literature

Data on Acrylate Esters

Ethyl acrylate, n-butyl acrylate, 2-ethylbutyl acrylate and 2-ethylhexyl acrylate are described in a technical bulletin (F-7434) recently issued by Carbide and Carbon Chemicals Company, 30 East 42 Street, New York 17. The booklet covers methods of polymerization, applications of polymers and copolymers, and selected references. Physical and chemical properties, shipping data, and reactions of the acrylate esters in chemical synthesis are included.

Flexi Steel Shelving

The Borroughs Manufacturing Co., 3002 N. Burdick, Kalamazoo, Mich., has published a 32-page catalog on Unitized Flexi Steel Shelving. The catalog illustrates 24 of many different units, and offers information on how to plan a steel shelving layout.

Linde Silicones

"Look to Linde for Silicones" is the title of a four-page catalog of the principal silicones sold by Linde Air Products Company, 30 East 42 Street, New York 17. Listed are the various Linde silicones, in liquid and solid forms, in the broad category of water repellents; oils and oil emulsions; and various other types.

Polak's Frutal Catalog

Polak's Frutal Works, Middletown, N. Y., has compiled a comprehensive new 22-page perfume catalog listing essential oils, terpeneless oils, synthetic aromatics, specialties, and perfume bases.

Syntomatic Booklet

Syntomatic Corporation, 114 East 32 Street, New York 16, now has ready a new catalog of perfume oils, perfume specialties, essential oils, and aromatic chemicals. A section of the catalog includes descriptions of the important specialties.

CSC Technical Data Sheet

Commercial Solvents Corporation, 260 Madison Avenue, New York 16, has issued a technical data sheet on 2-hydroxyethyltrimethylammonium bicarbonate, or HETAB, an industrial grade choline salt which has been added to the Company's list of standard industrial chemicals, and supplied as a 44 to 46 per cent aqueous solution. Produced only by CSC, Hetab is finding use as an alkaline catalyst and intermediate for choline salts.

Pneumatic Scale Bulletin

Pneumatic Scale Corp. Limited, Quincy 71, Mass., has issued Bulletin No. 130, a six-page folder describing its liquid rotary filling machines.

Scott Plastics Brochure

Scott Plastics, Inc., 410 Windsor Street, Hartford, Conn., has issued a four-page, four-color brochure describing the stock and custom plastic closures as well as services and facilities available.

Scotch Brand Tape Dispensers

Minnesota Mining and Manufacturing Company, St. Paul 6, Minn., has issued a 16-page booklet on Scotch Brand Tape dispensers and taping machines. The book illustrates and describes the wide range of taping machines available and describes the engineering service and development facilities of the Company.

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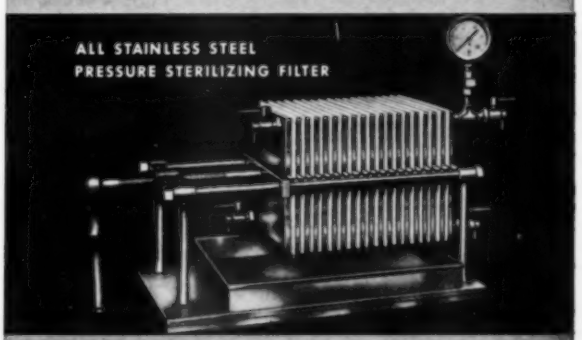

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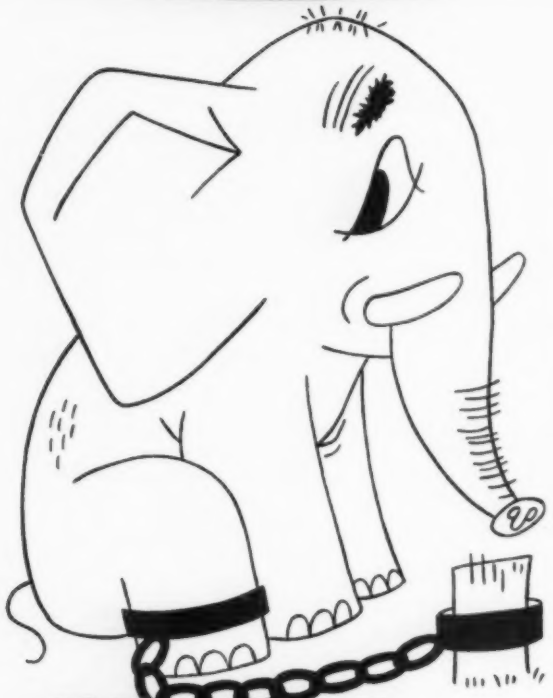

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(*Continued from page 558*)

scribe a new product, we don't know enough about why they are, or the relative influence of each advertising medium in stimulating continued use of a product.

Conclusion

While medical and pharmaceutical advertising presents many special problems, market research technics applicable to advertising in general can be effectively applied.

Consequently, Market Research people can and should voluntarily assist pharmaceutical advertising managers by cooperating with them in the application of fundamental principles of research to the study of professional and trade advertising.

The pharmaceutical manufacturing executive and Advertising Manager who fail to take full advantage of the results of such studies are guilty of missing excellent opportunities to materially increase the effectiveness of their promotion.

More attention must be given to the changing effectiveness of various promotional media and to better evaluation and improvement of technics of advertising. It is in seeking to attain these goals that the pharmaceutical advertising executive today leans more and more to market research for the answers to his problems.

UNEXPECTED PHARMACEUTICAL FLAVORS

(*Continued from page 467*)

The old reliable types such as mint, orange, and cherry still have their place in the laboratory of the pharmaceutical chemist, but it is a mistake to be limited to them as suitable selections can now be made from a far wider range of materials. An outstanding chemist who has contributed much to the importance of an internationally known pharmaceutical company, expressed the thought that the "spectrum of flavors should be broadened." However, unless it did have wide appeal, he pointed out that the flavor ought not to be considered. A flavor can be "different" yet popular; it certainly must not be exotic. Where therapeutic values, toxicity, minimum lethal dose and a large number of other factors in the pharmacodynamics of the active ingredients must be examined, flavor, although important, is necessarily a secondary factor. Our readers must not think that we consider therapeutic agents as nothing but vehicles for excellent and unexpected flavors. Nevertheless an unpalatable pharmaceutical can easily be ineffective, because the patient refuses to take it.

In spite of all the demands made on pharmaceutical research, great progress has taken place in the last few years in the utilization of new and original flavors. Manufacturers are justified now not only in demanding the adequate masking of unpleasant taste, but also in expecting flavors which are different, not duplications nor repetitions, but which are suitable in every respect. Reliance on the various sugars, synthetic

sweetening agents, and glycerin to sweeten a product is a method that can be readily improved. The excessive use of sweetening agents should be avoided because of the undesirable "cloying" effects, and, in some cases, bitter after-taste. While such essential oils as anise, coriander, and fennel do not actually possess a definite sweet taste, their judicious use does enhance sweetness. Awareness of the direct interrelation of smell and taste must not be lost in the preparation of the best possible flavors. Many investigators believe that the manifold of sensations which we think of as smell are far more complex than those in the case of taste. If the question of odor is eliminated, according to them, only four gustatory elements remain, namely sweet, salt, sour and bitter. But this is an over-simplification. Henning[8] rejects the statement that there are only four primary tastes; he considers the standard four to be salient but between any two of them he postulates a graduated series of taste sensations equally important. While alkaline and metallic tastes may be questioned by some investigators, they are very real to those who have had to pipette solutions of this nature in the laboratory. According to Kahlenberg, the metallic taste of a 0.0005 molar solution of silver nitrate is very pronounced and is discernible even at the greater dilution, 0.0002 mole.

The diligent compiler, Martindale, whose "Extra Pharmacopoeia" first appeared in London in 1883, devoted little attention to flavors. The twenty-second edition of this work (published in 1943 in two volumes) contains over two thousand pages; it has only a few notes which apply merely to substitutes for food flavors. In our country Dr. Adley Nichols[11] stimulated considerable interest in pharmaceutical flavors by sponsoring exhibits at a number of conventions of the American Medical Association.

It is generally the problem of bitter taste which concerns the manufacturer. Acrid taste is characteristic of almost all alkaloids, and of certain unrelated substances such as dextro-mannose, glucosides, magnesium salts, and a number of other compounds. Alkaloids are especially associated with bitter taste; strychnine is said to be the bitterest of all substances. Quinine has a bitter taste, common salt a saline one. But the bitter-salt taste of magnesium chloride is certainly not identical with that resulting from a mixture of common salt and quinine. The taste of the mixture betrays its components; the taste of magnesium chloride cannot be resolved. Such observations substantiate the view of Henning that there are actually more than four primary tastes. The set of examples given above may be multiplied by scores of others. In the field of essential oils and compounded flavors the problem is more complicated because there are so many components.

The interrelation of smell and taste has been pointed out so often that it is needless to dwell on it here. An interesting application of this dependence is exhibited in compounding citrus flavors. Oil of lemon and oil of

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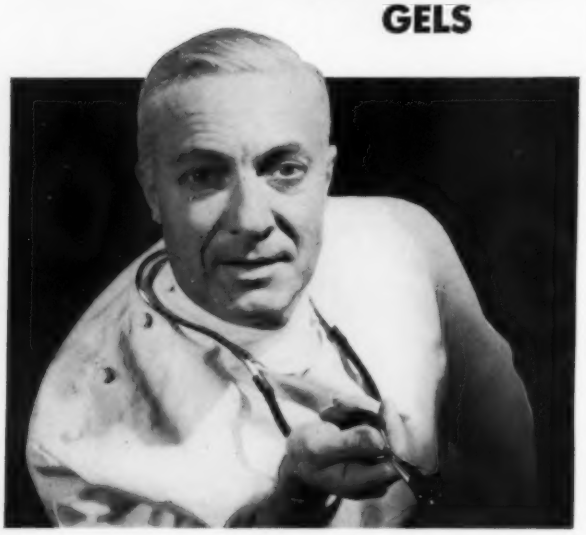

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orange have very good flavor qualities; either of these can be used to flavor many preparations. However, the addition of such oils as tangerine, grapefruit, and lime, alone or in combination, with or without the addition of small amounts of oil of bergamot and oil of neroli bigarade, result in versatile and unusual flavors of fine character. A small quantity of grapefruit oil may give the extra tartness; the addition of traces of neroli might impart an aroma to make the flavor richer; bergamot may yield a "tang" to the composition. The same procedure can be applied in the case of other flavor types. The use of a combination of the so-called red-berry flavors, raspberry, cherry, and similar types skillfully blended by an expert, yields valuable results.

In selecting the most suitable flavors for pharmaceutical use, the age group for whom the product is intended must be given consideration. If the product is for children, a chocolate or butterscotch type is appropriate. Older age groups, as a rule, do not care for sweet flavors, preferring those of the coffee, cordial, and wine types. In the case of children, taste sense is limited. Adults have wide taste experience which is usually keen. In older age groups, the sense of taste often becomes dulled. Where the pharmaceutical preparation is intended for a wide range of age groups, an effort should be made to select a flavor which has wide appeal. Spice oils have been suggested. The pharmaceutical industry in the United States has reached such a peak of development in recent years that its market is now the entire world. Leaders in the field realize that it is not enough to select flavors which have American appeal, but they must have a world-wide appeal. This is a goal which enterprising flavor chemists are now striving to attain.

The principal spice oils, such as cloves and caraway, can be modified by the use of related types as cardamom, cassia, cinnamon, ginger, and nutmeg. Because of their strong aromatic quality which enables them to impart aroma to the flavor, such essential oils as angelica seed, sage, basil, and ambrette seed offer many possibilities. Compounded flavors, too, have interesting facets—peach, pistachio, and maple are examples of this group. Butterscotch and grenadine show unexpectedly useful properties, as do root-beer and maplenut types. In the case of acid-tasting preparations, pineapple as well as estragon have been used with very good results. Celery seed oil and orris root oil impart a character, which for want of a better name is described as "body."

A most important but not necessarily a most common problem in pharmaceutical flavors is the covering of unpleasant tastes. Where the active ingredients have little taste or are present in small proportions, the mixture is bland and innocuous. This situation is a challenge to the ingenuity of the flavor chemist to develop distinctive, unexpected flavors with consumer appeal. The difficult taste problems, where an obtrusive character must be covered, should be treated in the same manner. After complete masking or nearly

complete masking has been accomplished, it is still advantageous to add other than the triumverate of mint, orange, and cherry in order to create a distinctive, individual flavor. Rarely should a product contain a single pure flavor. A mixture of flavors is given preference. An original flavor, difficult for competitors to duplicate, is made from a number of flavors well balanced and artfully blended. It is not always possible to mask an unpleasant taste simply by superimposing a pleasant flavor material. Often the experienced flavor chemist finds that he can accomplish the desired result by the use of ingredients which blend with the unpleasant factor in such a way that the final taste is acceptable.

The final flavor is not necessarily the result of a blend of essential oils and aromatics. Fruit acids, sweetening agents, salts and other materials such as glutamates contribute to the taste of the finished product.[4] In our present state of limited knowledge about the physiology and chemistry of taste, laboratory methods must still be, unfortunately, almost wholly empirical. It is less than one hundred years ago that the taste buds in man were discovered, independently by Loven and Schwalbe in 1867. Where there are few precedents and little previous experience, much time and effort must be consumed to obtain satisfactory results. For this reason even enterprising pharmaceutical chemists are often not willing to work on new flavors nor to modify old ones. They have too little time, not enough assistants, and their energy must be conserved for the main business on hand—the discovery, development, and manufacture of new and improved pharmaceuticals. For them there is a ready solution to the problem. The professional flavor chemist has long devoted his time and talents to the creation of unique flavor compounds which provide modern, well-formulated taste to pharmaceuticals. We can hope to see in the near future more products with tastes as interesting and as appealing as their packages, labels, and closures.

The author wishes to thank Dr. Lloyd C. Miller and Dr. Adley B. Nichols for their kindness in extending to him the use of the Library of The U.S. Pharmacopeia.

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CLARIFYING SKIN FRESHENING LOTIONS

(*Continued from page 475*)

the difficulty to be encountered in the filtration of liquids at reduced temperature. All of these things are important. However, the many varieties of filters and the many manufacturers make possible a wide selection of equipment, so that with the proper cau-

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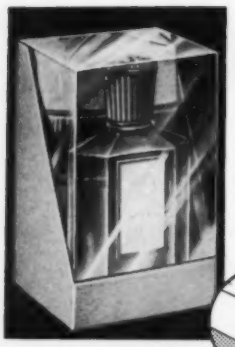

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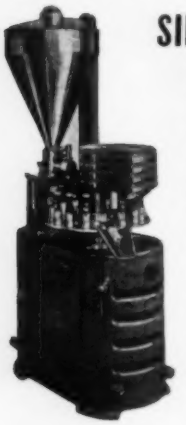

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tion, it should not be difficult to obtain a good reliable filter.

Many manufacturers use the regular funnel and filter paper. This equipment is sometimes adequate. However, certain products cannot be clarified in this manner, due either to the particle size of the precipitate or the viscosity of the solution. For this reason, other types of filters must be resorted to. There is not room enough here to elaborate on each individual type of filter. Suffice it to say, in most cases, where the funnel cannot be used, one of the several varieties of filter presses are used. A filter press consists of a series of metal or wooden plates and frames. Between each frame is a piece of cloth and usually filter paper is placed over the cloth. The frames are then pressed tightly together, and the liquid to be clarified is pumped through them. For the small manufacturer, a two or three disc filter press is recommended. These filters are easily portable, readily cleaned, and yield a reasonable production. The disc filters are essentially the same as the presses, except of course, they are circular rather than square.

In some instances, it is difficult to get a clear filtrate, even though an excellent filter is used. In this case, one of the many filter aids must be used. They are often used as a matter of form to insure a clear product, even though the filter may do a good job without them. These filter aids include such compounds as diatomaceous earth, fullers earth, talc, processed cellulose and powdered asbestos, as well as many other chemically inert materials. Activated carbon is used for the twofold purpose of both clarification and deodorization and decolorizing. Carbon, however, is sometimes rather difficult to filter out, due to its small particle size.

The action of these materials is to form a cake on the cloths or paper, thus acting as an additional filter. They are of especial value where the liquid to be filtered contains a colloidal precipitate. Their use greatly accelerates the filtration rate under the proper conditions. They are used in one of two ways. First, the aid can be dispersed in a suitable solvent and pumped through the filter, thus coating the papers. Or, secondly, it can be dispersed in the liquid to be clarified and pumped through the filter. In the latter case, the first few gallons must be refiltered.

Since a clear product is a necessity for the success of the product, all precautions to avoid cloudiness or sediment should be taken. The general outline, then, for the production of an uniformly clear product can be laid out as follows:

1. Age the product for at least two weeks. Allow all precipitate to settle to the bottom of the container.
2. Pump out the supernatant liquor, without disturbing the settled insolubles. This is optional.
3. Refrigerate the supernatant liquor at 32° F. for a minimum of 24 hours. This also, is optional.
4. Precoat the filter press with approximately two pounds of filter aid.

5. Pump the liquid to be filtered through the press. If the product has been refrigerated, the liquid should be filtered while still cold.

If these steps are cautiously followed, there is no reason, save chemical or bacterial change, for the product to cloud.

The actual preparation of freshening lotions entails no particular problem, except, of course, clarification, which was just discussed. These lotions consist primarily of alcohol and water, containing mild astringents and cooling agents. The more common agents used in these respects are: boric acid, benzoic acid, zinc sulfocarbolate, and menthol. Humectants, such as glycerin and the glycols, are used to give the right amount of drying and emolliency. The following formulas will serve to illustrate the preparation of these products:

No. 1

SKIN FRESHENER

Alcohol	28.4 per cent
Propylene Glycol	6.7 per cent
Zinc Sulfocarbolate	1.1 per cent
Boric Acid	2.0 per cent
Benzoic Acid	2.1 per cent
Menthol	0.1 per cent
Water	58.9 per cent
Perfume	0.7 per cent

Mix the propylene glycol and water. Add the solids to the water solution and stir until they are completely dissolved. Dissolve the perfume and menthol in the alcohol and add this solution to the water. Stir until the product is well mixed. Age for two weeks and filter.

This formula, as well as any of the others can be colored at the discretion of the manufacturer, using any of the certified colors. To assist the manufacturers in choosing a color for their product, the following list of certified colors has been included.

FD&C Blue No. 1	Brilliant Blue FCF
FD&C Blue No. 2	Indigotine
D&C Blue No. 4	Alphazurine FG
D&C Blue No. 6	Indigo
FD&C Green No. 1	Guinea Green B
FD&C Green No. 2	Light Green SF Yellowish
FD&C Green No. 3	Fast Green FCF
D&C Green No. 4	Light Green CF Yellowish
D&C Green No. 5	Alizarin Cyanine Green F
FD&C Orange No. 2	Orange SS
D&C Orange No. 4	Orange 11
FD&C Red No. 1	Ponceau 3R
FD&C Red No. 2	Amaranth
FD&C Red No. 4	Ponceau SX
FD&C Red No. 32	Oil Red XO
D&C Red No. 5	Ponceau 2R
D&C Red No. 19	Rhodamine B
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FD&C Yellow No. 3	Yellow AB

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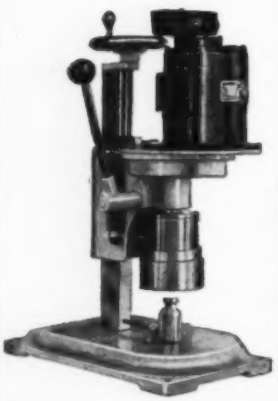

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These dyes can be used in any of the formulas contained in this article. By using one or more of these certified colors, in a product almost every shade of the spectrum can be obtained. The choice of dye, however, must necessarily be governed by the composition of the product. Complete stability and control tests should be run before any definite dye is decided upon.

The colors most frequently used in preparations of this type of preparation are amaranth, for red or pink, Tartrazine for yellow, and brilliant blue FCF for blue. The dye, of course, governs the specific shade. Sunset yellow contains more of an orange tone than does Tartrazine. Rhodamine B yields to a solution that fluoresces under ordinary light, and even more so under the influence of ultraviolet. The shade of this dye is usually fuschia or magenta. Due to its fluorescence, it is not used to any great extent in alcoholic lotions. FD&C Green No. 3 yields a green with a definite blue tone. The No. 2 green will go more to an aquamarine. In order to get a definite clean green, it is usually necessary to mix two or more dyes. For example, tartrazine and FD&C Green No. 3 can be carefully mixed to produce an excellent green.

No. 2
SKIN FRESHENER LEMONATED

Alcohol	32.41 per cent
Citric Acid	4.46 per cent
Boric Acid	2.03 per cent
Menthol	0.13 per cent
Oil of Lemon	0.32 per cent
Citral	0.14 per cent
Amber Bouquet	0.11 per cent
Tween 20	1.95 per cent
Water	58.45 per cent

Dissolve the citric and boric acids in the water with a little heat, if necessary. Dissolve the menthol in the alcohol and add this solution to the water. Mix the Tween 20 and perfume oils and slowly incorporate this mixture with stirring into the alcohol-water solution. Tartrazine can be added to give the characteristic yellow color. Age the product for two weeks, refrigerate to 32° F. and filter at this temperature.

No. 3
SKIN FRESHENER

Alcohol	42.0 per cent
Glycerin	8.4 per cent
Boric Acid	3.0 per cent
Menthol	0.2 per cent
Perfume	0.5 per cent
Water	45.9 per cent

(Continued on page 567)

(*Continued from page 566*)

Follow the same method of manufacture as is indicated in formula No. 1.

No. 4

SKIN FRESHENER

Alcohol SD39B	18.41 per cent
Ethylene Glycol	6.20 per cent
Oxyquinoline Sulfate	0.51 per cent
Menthol	0.20 per cent
Camphor	0.01 per cent
Water	73.96 per cent
Perfume	0.71 per cent

Dissolve the menthol, perfume, camphor, and oxyquinoline sulfate in the alcohol. Add the ethylene glycol and water in that order. Age the product and filter before bottling.

TO MARKET OR NOT?

(*Continued from page 463*)

observations. Little if any is understood in terms of fundamental mechanisms, yet there are some who would disagree with our current view. We in the Food and Drug Administration propose to proceed very cautiously indeed with intravenous fat products. We do not believe the facts at hand, nor does the experience with the product to date, justify the risks which seem apparent. Among other things it may be reasonably said that sufficient pharmacological and control data are lacking at present. Were I to repeat my title here, you would not have difficulty determining where the accent was placed.

New techniques are necessary. It would appear that many new techniques must be added to classical pharmacology if we are to evaluate adequately the drugs and chemicals of modern industry. This is voiced without reflection on pharmacology, but rather in an attempt to emphasize and perhaps stimulate additional consideration of the subject. In the absence of satisfactory testing methods careful scrutiny of marketing experience cannot be neglected.

One cannot be but awed by the tremendous pharmacological literature in this country alone. Yet it never ceases to impress me that only a relatively small segment of it is really concerned with basic mechanisms. Only insofar as we can develop knowledge along these lines will we really be able to resolve many of the problems which now confront us. Perhaps a specific example might help elucidate. Cincophen was introduced as an analgesic drug in 1912. It gained wide acceptance and it is reported that approximately 90,000 pounds of it was marketed in this country annually in about 500 different preparations. From about 1920 to 1934 many cases of hepatic injury were observed. All of the evidence seemed to incriminate cincophen. It was believed that this was an allergic

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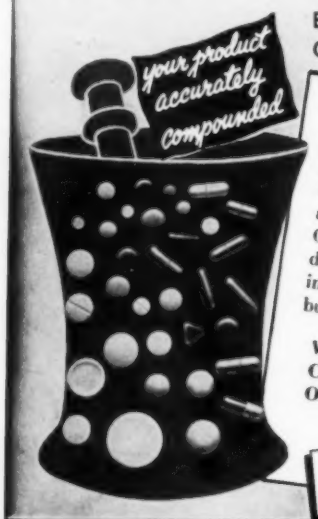

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response to the drug, producing hepatic necrosis. Not until 1947, however, was data presented which conclusively indicated that the acute yellow atrophy thought to be due to cincophen was in reality infectious hepatitis. This, too, is a responsibility for all of us: To see that clinical syndromes, with a variety of possible etiologies, do not become erringly attributed to drug administration or to the wrong drug. Alexander in his recent treatise, "Reactions with Drug Therapy," outlines the diagnostic criteria of drug hypersensitivity as follows:

1. Recognition of a given symptom or lesion as one that conforms to a pattern of drug hypersensitivity.
2. A positive history of exposure to a drug. Omission of all drugs will, in the great majority of cases, be followed promptly by clearing of the lesion.
3. Once the lesion has disappeared by omission of drugs, the readministration of the one at fault will reproduce the reaction. This is the best test, but the procedure carries a risk particularly when the original reaction consisted of shock or aplastic anemia. The test should be made with doses smaller than the original.
4. Since many reactions are due to allergy, the criteria given for that mechanism often will be applicable.
5. In hematological manifestations, blood studies may suggest the reaction. It should be stated that eosinophilia is no part of the essential picture of drug hypersensitivity.

We in the Food and Drug Administration and you are frequently handicapped and will continue to be so until better methods are developed to aid us in assessing the chronic toxicity of the drugs of tomorrow. It has been estimated by Mr. Dan Rennick of *American Druggist* magazine that in the year 1960 the nation's drug stores will fill a total of 554,000,000 prescriptions, an increase of 25 per cent of the number filled in 1954. This is premised on a nine per cent increase in population to a total of 177,500,000 in 1960. Even allowing a reasonable margin for error, this clearly indicates a sizable growth in the pharmaceutical industry and a significant increase in new drugs. We urgently need reliable methods of predicting the long-term effects of these drugs to come. For each one the question must be answered—to market or not.

COSMETIC CHEMISTS SEMINAR

(Continued from page 465)

properties of a properly constituted and properly disseminated emulsion of sweat and sebum.

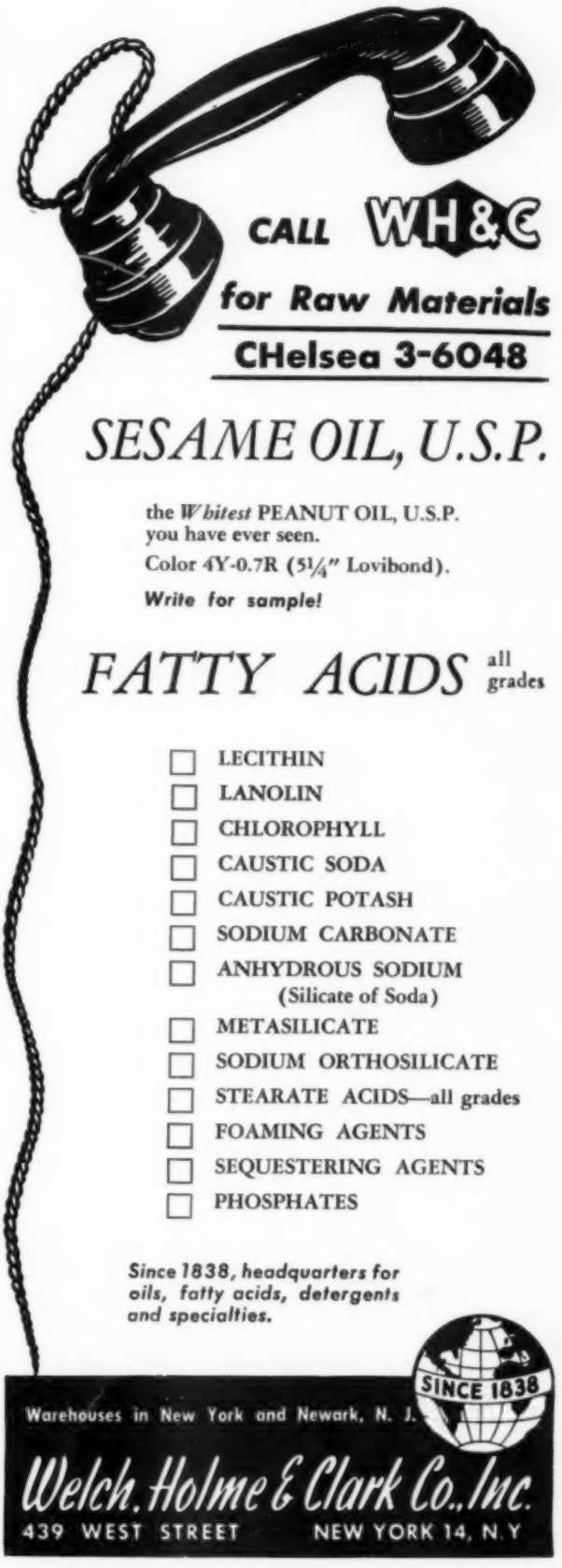
Faults in the horny receptacle itself, or in the surface emulsion of sweat and sebum can lead or contribute materially to such very common skin diseases as a variety of superficial coccal and fungal infections; excessive dryness, "chapping," "winter itch;" excessive

moisture and/or excessive oiliness and seborrhea; prickly heat; and perhaps even to nummular eczemas and hand and other "eczemas" as well as to still other frequently encountered full fledged dermatoses and minor skin complaints.

E. G. Klarmann, Lehn and Fink, Inc., presented his paper Chemical and Bacteriological Aspects of Antiperspirants and Deodorants and from a review of the data, it appears that a greater success has attended the cosmetic chemist's efforts to provide suitable means for suppressing underarm odor than for the reduction of the flow of perspiration. Underarm odor is due in most cases to bacterial action upon secreted sweat and, particularly, upon sweat of apocrine origin. Bacterial growth and activity is subject to control either by low pH levels developed by hydrolyzing aluminum salts, by suitable antibacterial agents, or both. A special position in this picture is being held by the recently studied ion-exchange resins, acting as adsorbents for malodorous volatile matter originating in decomposing perspiration, but without true antibacterial action. Greater exploratory efforts seem indicated in the study and possible utilization of the antiperspirant action of certain cationic surfactants which appear to act by affecting the electrophysiologic potential of the sweat ducts. While a number of pharmacodynamic agents from the anticholinergic and anti-adrenergic classes have been found to be capable of reducing the flow of perspiration, none appears to be safe enough for cosmetic usage; further probing in this field might lead to the discovery of antiperspirant compounds fit for use in cosmetic formulations provided that the risk of systemic toxicity could be abolished.

W. B. Shelley, of the University of Pennsylvania Department of Dermatology, presented a paper The Role of Apocrine Sweat in the Production of Axillary Odor. In man the apocrine sweat gland is a vestigal organ of the skin which is found only in localized areas. The largest number of apocrine sweat glands is found in the axilla, and it has long been known that these glands were responsible for the distinctive odor which emanates from the unwashed axilla. In the lower mammalia apocrine glands have been shown actually to produce odoriferous compounds. Until recently it has been assumed that this same finding was true of the human apocrine sweat gland. Recently, however, it has been possible to collect relatively pure apocrine sweat as it first appears on the skin surface. These specimens proved to be without any odor. Furthermore, it was found that this sweat was sterile and it was shown that contamination of the apocrine sweat with the ordinary surface bacterial flora rapidly led to the production of the distinctive apocrine odor of the axilla. Chemical inhibition of the growth of these organisms prevented the appearance of odor.

Cosmetic Aerosols. *F. T. Reed* of E. I. du Pont de Nemours & Co., in his paper The Propellent in Cosmetic Aerosols pointed out that the physical prop-



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erties of the fluorinated hydrocarbon compounds commonly used as pressure producers in the push-button products are of primary concern in determining the salability of pressurized cosmetic preparations. Boiling points and vapor pressures of the liquefied gases are probably the most important characteristics because they determine whether an aerosol product functions properly.

The bulk of aerosol products—nearly 100 different types now are available—are made up either of an active ingredient, co-solvent or carrier, and propellent, or of an active ingredient, surface active agent, water and propellent. The first of those two types of systems includes spray products like colognes, hair lacquers, and deodorants, while the second, which incorporates surface-active agents and water in the formulation, covers foam products such as shaving lather, shampoos and hair creams.

Regardless of the type of product, the basic principle behind the operation of both aerosol systems is essentially the same. The vapor pressure of the liquefied propellent inside the container supplies the force required to expel the active ingredient.

In the case of spray products, the flash evaporation of the propellent shatters the droplets of liquid active ingredient, as they leave the valve, into many very small particles—so finely divided they will float in the air for extended periods. With the foam products, where the liquid propellent is emulsified in the aqueous phase, the flash evaporation of the propellent expands the water solution into a foam full of the propellent gas.

Other properties which chemists must consider in formulating aerosol products, include liquid density, toxicity, flammability, stability, and effect on packaging materials. While the propellents such as the fluorinated hydrocarbons are nonflammable and of exceptionally low toxicity in themselves, the effect of active ingredients or solvents on toxicity and flammability of the finished aerosol must be carefully determined.

M. J. Root of G. Barr and Company in "Formulating for Pressure," stated that the formulation of a cosmetic product as an aerosol in which the propellent force is supplied by a liquefied gas requires special consideration. The product can be dispensed as a foam or as a spray. Spray products can be made with one liquid phase and a gas phase or two liquid phases and a gas phase. The two liquid phases can be in an emulsion system or as two layers. Spray products, in addition to the liquid and gas phases, may also have a solid phase in the form of a very fine powder. Foam products are emulsions, usually of the oil in water type, in which the propellent is part of the oil phase.

Although in most cases the corrosion characteristic of the product dictates the material of construction of the container, where there is a choice esthetic considerations may be the determining factor. Metal containers are available in tin plate and in aluminum.

Aerosol glass containers are now available in both the plain glass and the coated. Plastic containers are now available in both nylon and melamine formaldehyde. Consideration of type of container to be used must be given from the standpoint of size, corrosion, economics and appearance.

Corrosion has been the chief problem with the metal containers. Detection of corrosion by aging the product in the container and observation is both time consuming and unreliable. A method has been developed whereby the corrosion of a particular product with tin plate can be evaluated in about four weeks. A method has also been devised for determining whether an aluminum container is suitable for a given product.

Valves are now available in materials which present no corrosion problems with most cosmetic products. The component parts of the valve, the housing the stem, the gasket, the button and the spring must be checked with the product to determine whether the particular valve chosen is suitable.

One of the most important characteristics of a spray product is the spray pattern. Spray pattern involves the delivery rate, the particle size, distribution, and the spray angle. The factors affecting this spray pattern are the viscosity of the product, vapor pressure of the product, propellent, percentage propellent and the valve construction. A special dye technique has been applied which gives a good picture of the spray pattern obtained.

For pharmaceutical or certain cosmetic purposes the lowering of the skin temperature by aerosol products is of importance. The amount of lowering of skin temperature has been measured by use of a thermistor element and has been found to depend on the type and percentage propellent as well as on the formulation of the product.

The development of future products for aerosols includes new cosmetics and pharmaceuticals. The advent of aerosols makes available to the cosmetic chemist a non-aqueous base, namely the propellent system, which makes it possible to use chemicals previously unsuitable because of their insolubility in water systems. Pharmaceutical products adaptable to aerosol dispensing include topical antiseptics, anesthetics and antibiotics.

J. L. York, University of Michigan Department of Chemical and Metallurgical Engineering presented his paper on "Thermodynamics of Spray Formation." The volatile liquid ejected from a pressurized container forms into drops by a mechanism slightly modified from that found in ordinary pressure sprays. A portion of the propellent "flashes" immediately into vapor, initiating the break-up of the liquid and cooling the remaining liquid. The remaining atomization follows the patterns of spray drying, with heat transfer and continuing vaporization occurring simultaneously with further disintegration of the liquid. The basic factors for drop formation from a disintegrating jet were reviewed and the applicable principles of

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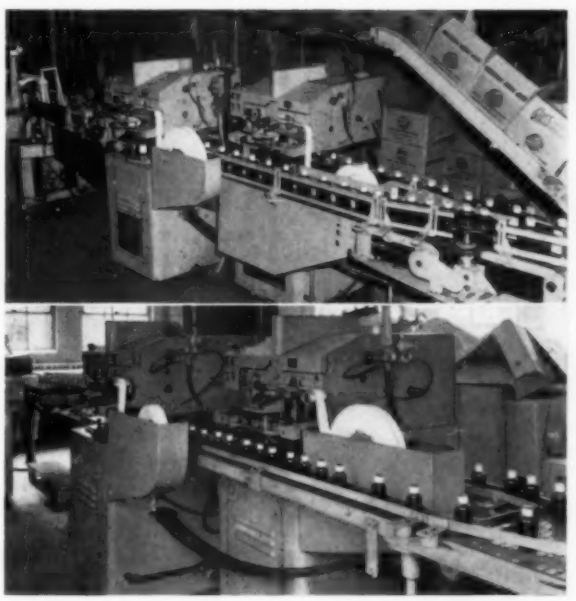

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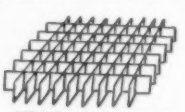

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spray drying presented, with discussion of the influence upon final particle shape and nature. A discussion of the possible effect on the product of employing other methods of atomization, such as swirl-chamber nozzles or gas-atomizing nozzles, was also included.

PACQUINS' NEW DESIGN

(*Continued from page 485*)

their hands in disinfectant and water 30 to 40 times a day."

In 1935, the cream was a single product, and the container had a purple label—the forerunner of the improved purple label now in use.

By 1946, Pacquin brought out its second hand cream product, "For Extra Dry Skin," with the old-style red label.

The Anti-Detergent cream, the newest item, was introduced in all but 11 Western states last year, as a completely new specialty product. By July of this year, all of the modernized bottles were being distributed nationally.

POLYETHYLENE AND PHENOLICS IN PACKAGING

(*Continued from page 483*)

permeability properties with regard to water vapor, and atmospheric gases. (See Table II.)

Several months ago, Bakelite Company announced its interest in the development of a new type of polyethylene having greater rigidity and higher temperature resistance accompanied by superior electrical properties and the same excellent chemical resistance.

TABLE II
Permeability of 1 to 2 mil Films at Room Temperature

	QUENCHED FLUOROTHENE	POLYETHYLENE DYNH	25 PER CENT PLASTICIZED BAKELITE VINYL RESIN VYNW
Water Vapor Transmission, grams/square meter/day	2.0	10-20	25-70
Gas Transmission, cc/100 sq. in/day			
Air	2.0	200-300	35-75
Oxygen	2-5	200-300	80-160
Nitrogen	1.0	50-100	5-40
Carbon Dioxide	5-10	1000-2000	200-1000
Hydrogen Chloride	5-10	2500-3000	800-1000

In contrast, this latest polyethylene process employs a low pressure polymerization technique. Bakelite Company is presently pursuing a program design to standardize this "low pressure" polyethylene so as to ensure its commercial availability in the near future.

Due to the purity that must be maintained in the shipping and storage of pharmaceuticals, the use of certain types of containers necessarily requires their ability to be sterilized. This factor has been a controversial subject of numerous discussions concerning polyethylene. With the advent of new "low pressure",

polyethylene this questionable matter should be alleviated to a great degree.

Up to this time, sterilization of conventional polyethylene has been accomplished by immersing the vessel or container in boiling water. However, this procedure must be carried out intelligently since the polyethylene container can be distorted as it approaches its softening temperature of 100-110 degrees C. The new type polyethylene which may be expected to have a softening range of 125-130 degree C. will lend itself well to sterilization in boiling water and possibly steam sterilization. In addition both types of polyethylene (see Table III for comparative property data) may be sterilized by ultra-violet light or by chemical means. In each case, a uniform procedure should be established.

TABLE III

Comparative Properties of Two Types of Polyethylene

	DYNH TYPE	NEW TYPE
Second Order Transition	111° C. (230° F.)	125° C. (257° F.)
Stress at yield point, psi	1400 @ 23° C.	2900-3500
	600 @ 80° C.	950-1300
	non-measurable @ 110° C.	470-600
Per Cent Elongation	ca 500	ca 100
Yield Strength, psi	1300	3000-3500
Modulus x 10^3, psi	22	100-135

These two types of polyethylene will have different and distinctive physical properties that will require due recognition for their proper use. Polyethylene, as such, represents one of several types of plastics which are derived from polyolefins. These range from the conventional polyethylene to that of the new-type polyethylene, with additional varieties to be forecast for the future.

During recent months much consideration and study has been given to the subject of irradiation of polyethylene. High energy radiation imparts to the polyethylene such properties as higher softening temperatures and extended chemical resistance at elevated temperatures. Polyethylene materials irradiated by such a method change fundamentally from their thermoplastic nature. Thus, all forming operations must be completed before the finished product is exposed to the radiation process. It has been found that excessive amounts of radiation cause the polyethylene to become hard and brittle. While progress has been made, extensive study still remains not only with regard to the effects or changes on physical and chemical characteristics but also from a standpoint of economics.

Permeability and porosity of polyethylene to various gases and liquids represents a property of particular concern to the drug and pharmaceutical industry. (See Table II.)

Polyethylene packaging film has an extremely low rate of water vapor transmission. Oxygen permeates at a somewhat higher rate, and carbon dioxide at still a faster rate. The product itself must also be taken into consideration along with film thickness. It is advisable to make a careful evaluation of these various factors so that a completely satisfactory container may

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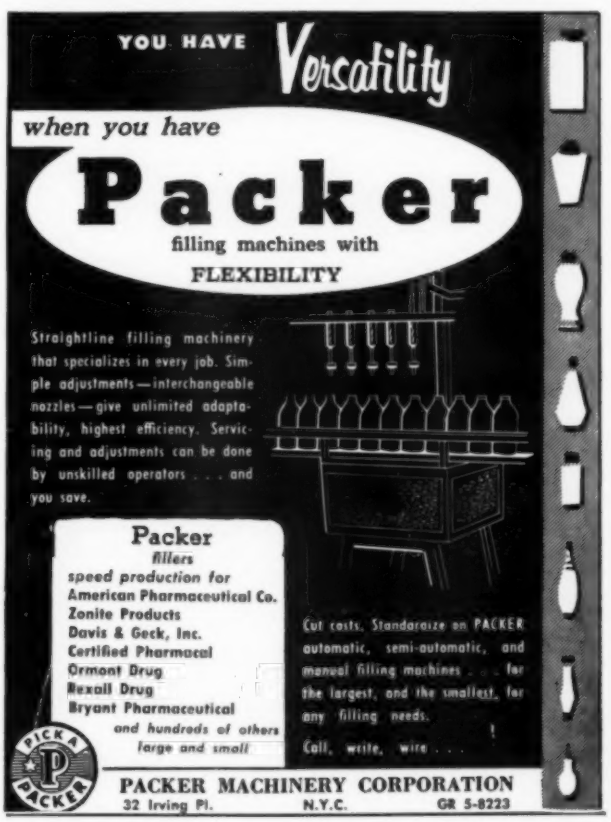
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be developed for the product under consideration.

Controlled or selective transmission for polyethylene through the use of a coating barrier has frequently been suggested. Experimentation along these lines is progressing in a number of laboratories and eventually, as has been the case in the development of a system for printing on polyethylene, a suitable barrier coating material may be available. Adherence of the coating to the plastic film represents the major problem because of the inherent chemical resistance of polyethylene.

For purposes of practicality it would be well to translate the foregoing property information into the end uses for which polyethylene has gained such wide acceptance.

In the molding industry a totally new concept of packaging led to the production of polyethylene bottles and containers. The low specific gravity of polyethylene meant reduced shipping costs, and its flexibility and resilience account for greatly reduced breakage losses. Molded polyethylene carboys have even been subjected to the crushing weight of a huge tractor without breaking. Such advantages as these introduced the marketing of numerous drug and cosmetic products in polyethylene containers. Now everything from nasal spray to foot powder may be purchased in polyethylene bottles. Innovations for dispensing these materials were soon incorporated as part of this wonderful squeezable plastic. These specially designed bottles easily and effectively discharge either sprays or powders. They represent the ingenuity of designers in developing outstanding applications for polyethylene. And again, the complete safety with which these containers may be used cannot be overlooked. Either thread type or force-fit closures are generally employed with these flexible containers. In addition undercut molded caps are being used extensively on glass vials either to replace corks or to obviate the necessity of a threaded top.

Extrusion represents another large field for the fabrication of polyethylene. In this process the molten plastic passes through a die which shapes the material into any desired cross section. Flexible tubing for laboratory use may be produced by this process. Extruded tubing has also found its place in the packaging field. Cut to a desired length, it can be crimped and heat sealed at one end, filled, and the dispensing end attached. Such tubes always revert to their original shape after being squeezed and, thus, carry a complete and undistorted sales message to the public until the contents have been completely dispensed.

The very popular polyethylene film package basically represents another product of the extrusion process. In it are packaged all varieties of fruits, vegetables, and miscellaneous foodstuffs as well as soaps, toys, hardware, and a host of other consumer items. A suggested use for the pharmaceutical industry which has recently appeared on the market is the packaging of pills and capsules. This practice, if generally accepted, would eliminate the carrying of

bulky and even breakable bottles. To carry this packaging idea one step further, it would be a relatively simple matter to package pills or capsules individually in a strip of polyethylene film. Such unitizing would undoubtedly be of convenience to doctors and possibly more so to patients who frequently leave the house with a miniature drugstore in their pocket or purse. In this form, each pill is heat sealed into its own sanitary film package. It is believed that the pharmaceutical industry has an opportunity to introduce new economies as well as safeguards into the sale of its products.

For certain applications, polyethylene in combination with paper, aluminum foil, or scrim is of practical significance. Such dual combinations serve to provide improved moisture-resistant wrappings or, in the case of aluminum foil, improves the tear resistance and general usefulness. As an improved barrier material, the aluminum foil contributes to the control of porosity and permeability characteristics of this type of system.

Polyethylene-paper combinations find their greatest outlet as liners for barrels, drums, or large packaging bags. Polyethylene's chemical inertness and resistance to moisture are the desirable contributions in these applications. Frequently the little circle or liner of resilient inert material found inside a bottle cap is a polyethylene coated paper that forms a tight, moisture-proof seal with the top of the containers.

All of these various applications have exerted a tremendous demand on the available supplies of polyethylene. In keeping with that demand, production facilities have increased proportionally. The year 1945 saw only ten million pounds of resin produced. This figure has risen steadily, and future forecasts are as high as 627 million pounds per year by 1960. This healthy growth will be accomplished not only with the present products on the market but also with the different types of polyethylene and compounds that will come from research and development laboratories. Each new type of resin will develop a variety of new and interesting applications. Similarly, a great many new applications will be discovered, and polyethylene resin will be produced to fit their needs. The future of polyethylene as a packaging material appears to be unlimited.

Phenolic molding materials discussed at the opening of this presentation may be expected to serve in their time honored ways. Additional developments may be forthcoming from time to time as stimulated by an appreciation of the further needs and requirements of the pharmaceutical industry.

PATENT THOUGHTS AND TRENDS

(Continued from page 501)

2,715,624—**Am. Home Products—Dimethyl Piperazinium Theophylline-7-Acetate.**
2,715,626—**Merck—Dihydrocodeinone Process.**
2,715,628—**Sandoz (Switzerland)—Thiophenes.**

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